GENERAL LIBRARY
AUG 30 1918
UNIV. OF MICH.

THE IRON TRADE REVIEW

Published Weekly
Vol. LXIII No. 9

CLEVELAND, AUGUST 29, 1918

Entered as second class matter at the postoffice at Cleveland, Ohio, under the act of March 3, 1879

Four Dollars a Year
Single Copies 15 Cents

FIRE BRICK

We can now furnish from stock Fire Brick made by any process you desire —handmade—soft mud—dry press—steam press—or stiff mud wire cut.

Immediate Delivery

on

Dover 9" and 9" Shapes
Buckeye brand, 9" and 9" shapes
Duco brand, 9" only
Wire cuts, full size 9" and 9" shapes
Plastic Fire Clay, crude or ground

If you contemplate using any quantity of the above Fire Brick during balance of the year, it will pay you to write us at once for prices. Our car supply now is good—Better get the brick on the ground before shipping conditions change. You remember the delays of last winter.

We also solicit your inquiries on North Bend brand.

Dover Fire Brick Company

509 Cuyahoga Building
CLEVELAND, OHIO

Advertisers' Index, pages 165-167 | Contents, page 476 (Editorial) | "Where-to-Buy", page 90
Engineering Directory, pages 132-133 | Classified Advertisements, pages 143-164

H. KOPPERS COMPANY

Builders of

By-Product Coke and Gas Ovens
Benzol Recovery Plants
Tar Distilling Plants
Direct Process for Manufacture of Ammonium Sulphate
Ammonia Stills

CONSULTING ENGINEERS

on the operation of

By-Product Coke Plants and Auxiliaries

UNION ARCADE BUILDING
PITTSBURGH, PA.

THE IRON TRADE REVIEW

Vol. LXIII Cleveland, August 29, 1918 *No. 9*

Strive to Insure Full Production

Government Assuming Responsibility for Backing Up Iron and Steel Industry in Growing Difficulties Over Coal, Transportation and Labor—Maintenance of Mills' Present High Output is Imperative—Producers Meet in New York

MAXIMUM government demands for war steel are being met by the mills despite rapidly growing obstacles. How long this production can be maintained, not to think of its being increased, forms a question of greatest immediate importance. The government is perceiving clearly that under the war-made conditions the responsibility for adequate coal, transportation and labor supplies largely rests with itself. This is especially so in view of the extension of the draft and the few months remaining before unfavorable weather again becomes a major factor. Energetic measures accordingly are being framed not only to uphold current output but to realize fully the 1,800,000 tons of new steel capacity which will come in by Jan. 1. The meeting at Washington last week between leading steel producers and representatives of all war branches of the government directly concerned, has done much to clear the air and to fix the relative responsibility for future performance.

Coal remains at the base of the problem. Production of sufficient coal for by-product coke plants especially is proving troublesome. This difficulty will grow as the numerous by-product extensions backed by the government come into commission. At one time during the past week seven or eight blast furnaces were banked because of a lack of coke or because of its inferior quality. A strong effort is being made to increase beehive coke production by procuring coal for the Frick plants in the Connellsville region which have been shut down by reason of their coal supply having been diverted to the new Clairton by-product ovens of the same interest.

Cast Shells Are Wanted

The foundry industry's direct participation in war production is to be materially increased by a great enlargement of the semisteel shell program. Orders are about to be distributed for 7,000,000 to 8,000,000 shells of this character, a large part of which are for France. It has been proposed that the malleable foundry capacity of the country be turned to the making of these shells for which this plant equipment is believed to be especially suitable. A general meeting of malleable casting manufacturers to be held in New York this week is expected to settle the details of this undertaking.

Rail Prices Hang Fire

Due to the dilatory tactics of certain officials of the railroad administration, standard rail prices still are hanging fire. Other branches of the government find acceptable the proposed figures of $55, mill, for bessemer, and $57, mill, for open-hearth rails. In the meantime the needs of domestic roads for replacement are becoming more pressing and a new order for 250,000 tons for quick shipment is expected soon from the railroad administration. General Pershing has asked for 150,000 tons more for France. In addition to the 20,000 cars recently placed for France, 40,000 cars still are to be awarded. Rail production is increasing due to the transfer of shell steel rolling to other classes of mills, particularly to the wire and bar plants. Because of the inadequate forging capacity in this country, a large tonnage of shell rounds is to be shipped abroad for finishing. Shell steel production by the mills has been running heavy and is close to theoretical capacity. The plate mills have raised their shipments to 117,000 tons weekly or to more than 6,000,000 tons annually, which has been the maximum rated output.

Iron Costs Taken Up

Pig iron costs are among the matters being given consideration at the meeting of iron and steelmakers in New York this week. This meeting is preliminary to the usual conferences at Washington during the next few weeks for the settlement of last quarter iron and steel prices. The special price concession of iron and steel to the farming implement industry, about which so much has been said in recent weeks, still is unsettled, and may receive consideration at New York.

AUGUST 29, 1918

THE IRON TRADE REVIEW

A weekly publication devoted to the Iron, Steel, Foundry and Metalworking Industries.

Published Every Thursday by
THE PENTON PUBLISHING CO., Cleveland

BRANCH OFFICES

CHICAGO - - - - - 1147 Peoples Gas Bldg.
CINCINNATI - - - - - - 128 Opera Place
NEW YORK - - - - - - 508 West St. Bldg.
PHILADELPHIA - - - - 1316 Land Title Bldg.
PITTSBURGH - - - - - 2148-49 Oliver Bldg.
WASHINGTON, D. C. - - - 40 Metzerott Bldg.
BIRMINGHAM, ENG. - - - Prince's Chambers

Subscription, United States and Mexico, $4 per year. Canada; $6, and other Foreign Countries, $8 per year.

Entered at the Postoffice at Cleveland as Second Class Matter

Copyright 1918 by the Penton Publishing Co.

IN THIS ISSUE

PAGE

IRON AND STEEL MARKET REVIEW..... 475
EDITORIALS.....476, 477
IRON AND STEEL PRICES.....478, 530
INDEX TO MARKET REPORTS..... 478
IRON AND STEEL MARKETS..... 479
FILTERED WATER FOR INDUSTRIAL USE..... 491
NEW GRENADES AND THEIR USES DESCRIBED..... 494
CARBOCOAL FUEL PROCESS PERFECTED..... 496
FOR OUR VICTORIOUS ARMY—MAKING THE BROWNING HEAVY MACHINE GUN..... 498
NEW STANDARDS FOR FRENCH INDUSTRY..... 500
DANGER TO EQUIPMENT FROM IMPURE COAL..... 501
550-FOOT ORE BRIDGE BUILT IN 65 DAYS..... 502
CUTTING STEEL INGOTS WITH OXY-HYDROGEN..... 504
METAL CONGRESS PROGRAM PERFECTED..... 507
Production of War Materials to be Discussed from Every Angle at Meeting in Milwaukee, Week of Oct. 7—Machines for Making Munitions to Feature Exhibits—Every Branch of Metal Industry to be Represented.
STEEL PRODUCTION HINGES ON COAL..... 510
Frank Expressions at Conference of Government and Steel Company Officials Clears Air and Promises to Bring About More Effective Co-operation—By-Product Fuel Short—Wire Mills to Switch to Shell Steel.
BRITISH SOLDIERS RETURNED TO MINES..... 513
LABOR IS ENCOURAGED TO ORGANIZE..... 516

Lead Industry Self-Regulated

THE lead industry furnishes a good example of the support given the government by the metals trades. Unlike most other industries, the lead industry is not under formal governmental control, either as regards prices or distribution. Such regulation has been undertaken by the producers themselves, with such success that it has attracted the warmest commendation in all quarters. As in the case of steel, there is a shortage of lead, with direct and indirect war work absorbing the bulk of supplies. The lead producers' committee for war service some time ago fixed maximum prices of 8.05c, New York basis, and 7.75c, East St. Louis basis, above which levels all producers were bound not to sell. No lead is being distributed for resale except in less than carload lots and retailers' profits are limited to ½c a pound over the wholesale price. All manufacturers and dealers are being urged to eliminate nonessential uses of lead in order that there may be more metal available for direct and indirect government work.

Two years ago, any such agreement would have elicited a howl from every yellow journal and from every muckraker in the country, but now such action is commonplace. The iron and steel and copper industries led the way. Officially under government control, they have exerted themselves to the utmost to assist in the conduct of the war. Government control would be an empty name without the co-operation of the industries themselves, for the economics involved in their tremendous operations and intricate ramifications demand an expert working knowledge only possible from the lifelong experience of leaders in each branch. That the policy of such leaders in their present positions of higher responsibility has reflected only fairness and loyalty, is demonstrated by the somewhat wider latitude granted the lead industry.

Paying Tribute to the Farmer

MUCH discussion has been aroused among buyers and sellers of iron and steel over the $5 price concession to the implement manufacturers dating from July 1. Many buyers take the position that through this action undue partiality has been shown to a single branch of consumption. Among the producers themselves it is manifest there has been a considerable division of opinion as to the necessity or advisability of this special allowance. While, as published, the cumulative effect of this divergent opinion has been to delay the application of the concession, there seems to be no good reason for expecting that the plan will not be carried out, as originally determined.

The whole matter it is apparent has been precipitated by the change of the basing point on plates, shapes and bars from Pittsburgh and Chicago to Pittsburgh exclusively. This has been operated to raise the price on these products to buyers in the Chicago district by $5.40 per net ton representing the freight charge from Pittsburgh to Chicago. Since most of the implement trade buying is centered in the Chicago territory, many of the manufacturers in this line have been affected, especially since in the past they have been accustomed to buy on a Chicago base. The $5 price allowance it is stated has been made with the idea of offsetting to the implement trade, the new freight cost of their steel. Otherwise the farm tool interests have declared it would be necessary to advance the price on their goods to their customers, the farmers. The government is understood to have been unwilling to see any advance made to the farmers. It therefore has looked to the steel industry to see that it be avoided by reducing the price of material.

This attitude of tender consideration for the farmers on the part of the government has something familiar about it. All industry evidently must stand aside when the interest of the farmer is concerned. In this case the steel industry is asked to cut its legitimate prices, those allowed by the government itself, and to extend special favors to those engaged in agricultural pursuits. Yet the farmer by the grace of the government in allowing him very profitable

prices for what he sells, is amply able to pay any increase in the cost of his tools. This, actually in the individual case would be a small matter. A minimum price is guaranteed the farmer on his wheat and other products; the iron and steelmaker must get what he can under a maximum figure but no more.

Much has been made by the government in the past of the necessity for evenhanded treatment for all buyers of steel. In the steel corporation suit, a strong attempt was made to prove and to attack any practice that suggested special favors for certain consumers or industries. Now the government is in the position of clearly sponsoring price discrimination on steel, for since it is in practical control of all prices, no general concession from maximum levels could be put through without its approval. It has done more than that. It has become a party to the urging that the reduction be made, unmindful evidently that hundreds of other consumers, similarly affected by the change of basing points, must pay the added amount for their material.

The steel industry itself, in large part, is responsible for the present situation. Its disposition or perhaps more truthfully of certain elements of it, for many years to put the implement industry in a special class in negotiating contracts, has borne fruit. It needs to be said, however, a vigorous effort has been made in recent years by the producers to check any such discriminatory tactics. Those makers, accordingly, who now have stoutly opposed a reversion to the old practice of special treatment are continuing to uphold a policy of fairness to all which under normal condition of trade had won the endorsement of the whole industry.

War Stimulates Canadian Industry

CANADA is coming to the front in an industrial way as the result of war demands to a far greater extent than had been expected. No question as to its contribution of men of the British army ever was entertained, but it was to be expected that such a country naturally would take slowly to the more difficult processes of manufacture. The start now made, no doubt will develop largely and will add to the industrial activity of the dominion in the post-war years.

The British ministry of munitions paid 15 per cent of its expenditures for the last half of 1917 to Canadian manufacturers. This showing is remarkable in view of the limited industrial development existing before the war. This was not payment for a few crude products but covered nearly the whole range of munitions manufacture. Practically every type of shell has been made in Canada and the finer parts of munitions as well.

The total value of such manufactures from the beginning of the war to May 31, 1918, was $1,200,000,000. Shells turned out up to that date numbered 59,390,000 and 450 plants are engaged in their manufacture. The United States government has placed contracts in Canada for 11,000,000 shells and 13,000,000 forgings. The rise of Canada in industrial importance as a result of the experiences of the war is to be seen in this record.

Wipe Out a Disgraceful Record

QUANTITY production of airplanes may soon be expected. While much of the work done on the aircraft program in the last 16 months deserves commendation, the record is largely one of mismanagement, delays and wasted funds. These two conclusions are those drawn by the senate subcommittee which has been investigating the failure to place American airplanes in service on the battlefront.

The committee in its report took the position that little is to be gained by criticisms of past blunders. This viewpoint, while generally approved, must not be allowed to lead again to future disappointment through a repetition of the same errors—permitted, to a large extent, by the satisfaction of a public coddled to indifference by roseate official pronouncements.

Public interest in the unfortunate aircraft muddle has been alert for six months. The reorganization of the civilian and military bodies directing the program, brought about by an aroused public opinion, promises more airplanes in the near future. But the report of the senate committee indicates that some of the indecision so disastrous last autumn and winter has not been thoroughly eliminated.

The report throws light on many phases with which the public has been unfamiliar. England and France up to a recent date had delivered 2114 planes and these enable us to maintain 13 squadrons of 18 planes each in service at the front. Aug. 7 saw the first American-built plane used in service over the German lines, 18 such machines carrying out an expedition on that date.

Upon the success of our future aircraft production rests much of the hopeful anticipation for bringing the war to an early conclusion. The question of supplies, whether of steel or other materials, has not been one of the causes of our tardiness. The skill of our manufacturers when given a definite job and permitted to continue that work, is equal to the task of outfitting our army in France with airplanes. The public which is learning the slogan of "win the war quickly" should and will demand a record of airplane production from now on that will obscure the story of the past year of lost opportunity.

Iron and Steel Prices

Corrected to Wednesday Noon

SCRAP, WAREHOUSE AND IRON ORE PRICES ON PAGE 530

PIG IRON

Bessemer, valley	$35.20
Bessemer, Pittsburgh	$36.60
Basic, Pittsburgh	33.40
Basic, eastern Pa.	32.00
Basic, Buffalo	32.00
Malleable, Pittsburgh	34.90
Malleable, Chicago	33.50
Malleable, Buffalo	33.50

GOVERNMENT SCHEDULE

1.75 to 2.25 silicon (No. 2 foundry, No. 2 plain, and No. 3 southern), $33 furnace base.

2.25 to 2.75 silicon (No. 2X, No. 1 Northern foundry, and No. 2 southern), base plus 50c.

2.75 to 3.25 silicon (No. 1X, No. 2, soft), base plus $1.50.

Over 3.25 silicon, $34.50, plus $1.00 for each ½ per cent of silicon.

No. 1X, Phila.	35.25 to 35.50
No. 2 foundry, Pittsburgh	34.40
No. 2 foundry, Cleveland	33.00
No. 2 foundry, Ironton	33.00
No. 1 foundry, Chicago	33.50
No. 2 foundry, Chicago	33.00
No. 2X foundry, Phila.	34.25 to 34.50
No. 2X foundry, N. J. tide	34.25 to 34.50
No. 2X foundry, Buffalo	33.50
No. 2 plain, Philadelphia	33.75 to 34.00
No. 2 plain, N. J. tide	33.75 to 34.00
No. 2 southern Birmingham	33.00 to 33.50
No. 2 southern, Cincinnati	37.10
No. 2 southern, Chicago	38.50
No. 2 southern, Phila.	40.10
No. 2 southern, Cleveland	38.50
No. 2 southern, Boston	41.00
No. 2 southern, St. Louis	39.75
Virginia, No. 2X, furnace	33.50
Virginia, No. 2X, Phila.	37.60
Virginia, No. 2X, Jersey City	37.90
Virginia, No. 2X, Boston	38.20
Gray forge, Pittsburgh	33.40
Silveries, 8 per cent, furnace	45.50
Silveries, 8 per cent, Chicago	48.50
Low phos. standard, Phila.	56.00
Low phos. Lebanon, furnace	50.00 to 52.00
Low phos., Pittsburgh standard	54.40
Charcoal, Superior, Chicago	37.70 to 38.00
Charcoal, Superior, Buffalo	37.50
Charcoal, southern to 2 per cent silicon	50.00

COKE

(At the ovens)

Connellsville furnace	$6.00
Connellsville foundry	7.00
Pocahontas furnace	8.00
Pocahontas foundry	8.00
New River foundry	8.00
New River furnace	8.00
Wise county furnace	7.25
Wise county foundry	8.25

FERROALLOYS

Ferromanganese, 70 per cent delivered	250.00
Spiegel, 16 per cent fur., spot	75.00
Spiegel, contracts, furnace	75.00
Ferrocarbon titanium, carloads, maker's plant	200.00
Ferrosilicon, 50 per cent, third quarter, Pitts.	147.50 to 152.50
Ferrosilicon, 50 per cent, Pitts., remainder of 1918	147.50 to 152.50
Bessemer ferrosilicon, 10 per cent	55.00
Bessemer ferrosilicon, 11 per cent	58.30
Bessemer ferrosilicon, 12 per cent	61.60

Ferrosilicon prices at Ashland, Ky., Jackson and New Straitsville, O.

SEMIFINISHED MATERIAL

BILLETS AND BLOOMS

Open-hearth, Pittsburgh	$47.50
Open-hearth, Philadelphia	51.30
Open-hearth, Youngstown	47.50
Bessemer, Pittsburgh	47.50
Bessemer, Youngstown	47.50
Forging, Pittsburgh	60.00
Forging, Philadelphia	63.80

SHEET BARS

Open-hearth, Pittsburgh	$51.00
Open-hearth, Youngstown	51.00
Bessemer, Pittsburgh	51.00
Bessemer, Youngstown	51.00

SLABS

Pittsburgh and Youngstown	$50.00

WIRE RODS AND SKELP

Wire rods, Pittsburgh	$57.00
Grooved skelp, Pittsburgh	2.90c
Sheared skelp, Pittsburgh	3.25c

SHAPES, PLATES AND BARS

(In cents per pound)

Structural shapes, Pitts.	3.00c
Structural shapes, Phila.	3.23c
Structural shapes, N. Y.	3.245c
Structural shapes, Chgo.	3.27c
Tank plates, Chicago	3.52c
Tank plates, Pittsburgh	3.25c
Tank plates, Philadelphia	3.48c
Tank plates, New York	3.495c
Bars, soft steel, Pittsburgh	2.90c
Bars, soft steel, Chicago	3.17c
Bars, soft steel, New York	3.145c
Bars, soft steel, Phila.	3.13c
Bar iron, Phila.	3.73c
Bar iron, Chicago	3.50c
Bar iron, Cleveland	3.67c
Bar iron, New York	3.745c
Bar iron, Pittsburgh	3.50c
Hard steel bars, Chicago	3.00c

RAILS, TRACK MATERIAL

Angle bars, Pittsburgh base	3.25c
Angle bars, Chicago base	3.25c
Standard bessemer rails, mill	$55.00
Stand. open-hearth rails, mill	57.00
Light rails, 25 to 45, mill	3.00c
Relaying rails, light, St. L.	60.00 to 67.00
Spikes, railroad, Pitts.	3.90c
Track bolts, Pittsburgh	4.90c
Track bolts, Chicago	5.115c
Tie plates, Chicago	3.25c

WIRE PRODUCTS

(Per 100 lbs. to jobbers; retailers 5c more)

Wire nails, Pittsburgh	$3.50
Coated nails, Pittsburgh	3.45
Plain wire, Pittsburgh	3.25
Galvanized wire, Pittsburgh	3.95
Polished staples, Pittsburgh	3.65
Galvanized staples, Pbgh.	4.35
Barb wire, painted, Pitts.	3.65
Barb wire, galvanized, Pitts.	4.35
Cut nails, Pittsburgh	4.00

CHAIN, PILING, STRIP STEEL

(In cents per pound)

Chain, 1 in. proof coil, Pitts.	7.50c
Sheet piling, base, Pitts.	4.00c to 5.00c

Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100 inch and heavier, base per 100 pounds, 6.50c.

Market Report Index

	Page
Weekly Market Review	475
Pig Iron	479
Coke	481
Scrap	482
Semifinished Steel	483
Sheets	483
Ferroalloys	484
Bars	484
Nuts, Bolts and Rivets	484
Plates	485
Warehouse	485
Merchant and Cast Iron Pipe	485
Cars and Track Materials	486
Structural Shapes	486
Wire	487
Tin Plate	487
Nonferrous Markets	490
Coke By-Products	519
Machine Tools	520

SHEETS

(In cents per pound)

SHEET MILL BLACK

No. 28, open-hearth, Pitts.	5.00c
No. 28, bessemer, Pitts.	5.00c
No. 28, open-hearth, Chi.	5.27c

TIN MILL BLACK

No. 28, open-hearth, Pitts.	5.00c
No. 28, bessemer, Pitts.	5.00c

GALVANIZED

No. 28, open-hearth, Pitts.	6.25c
No. 28, bessemer, Pitts.	6.25c
No. 28, open-hearth, Chi.	6.52c

BLUE ANNEALED

No. 10, open-hearth, Pitts.	4.25c
No. 10, bessemer, Pitts.	4.25c
No. 10, open-hearth, Chi.	4.52c
No. 10, open-hearth, Phila.	4.48c

TIN PLATE

(Per 100 lb. box)

Tin plate, coke base, Pitts.	$7.75

IRON AND STEEL PIPE

Base Pittsburgh

Base, Pittsburgh	Black Per cent off	Galv. Per cent off
¾ to 3 in., butt, steel	51	37½
¾ to 3 in., butt, iron	33	17

BOILER TUBES

Steel, 3½ to 4½ inches, l. c. l.	30
Iron, 3½ to 4½ inches, c. l.	12½

CAST IRON WATER PIPE

Without War Freight Tax

(Class B Pipe)

Class A pipe is $1 higher than Class B.

Four-inch, Chicago	64.80
Six-inch and over, Chicago	61.80
Four-inch, New York	65.70
Six-inch and over, N. Y.	62.70
Four-inch, Birmingham	58.00
Six-in. and over, Birmingham	55.00

HOOPS, BANDS, SHAFTING

Hoops, Pittsburgh	3.50c
Bands, Pittsburgh	3.50c
Hot rolled strip steel, Pitts.	3.50c
Hot rolled strip steel, Pitts. stamping quality	4.00c
Shafting, Pitts., carloads	17 off to list
Cotton ties, Aug., per bundle	$1.94

RIVETS

Structural rivets, Pittsburgh	4.40c
Boiler rivets, Pittsburgh	4.50c
Rivets ⅞ in. & small., Pitts.	50 and 10 off

NUTS AND BOLTS

(Delivered within 20-cent freight radius)

CARRIAGE BOLTS

(⅜ x 6 inches, smaller and shorter)

Rolled thread	50–5 off
Cut thread	40–10–5 off
Larger and longer	40 off

MACHINE BOLTS

(⅜ x 4 inches, hot pressed nuts)

Rolled thread	50–10–5 off
Cut thread	50–5 off
Larger and longer	40–10 off
Cold pressed semifinished hexagon nuts ⅝ in. and larger	60–10–10 off
Cold pressed semifinished hexagon nuts ⅞ in. and smaller	70–5 off
Gimlet and cone point lag screws	50–10 off

NUTS

Hot pressed, square blank	2.50c off
Hot pressed, square tapped	2.30c off
Hot pressed, hexagon blank	2.30c off
Hot pressed, hexagon tapped	2.10c off
Cold pressed, square blank	2.25c off
Cold pressed, square tapped	2.00c off
Cold pressed, hexagon blank	2.25c off
Cold pressed, hexagon tapped	2.00c off

Prices Present and Past

(Yesterday, a month ago, three months ago and a year ago)

Quotation on leading products August 28, average for July, 1918, average for May ,1918, and average for August, 1917. Prices are those ruling in the largest percentage of sales at the dates named.

	Prices Aug. 28, 1918	Average prices July, 1918	May, 1918	Aug., 1917
Bessemer pig iron, Pittsburgh..	$36.60	$36.60	$36.15	$55.55
Basic pig iron, Pittsburgh.....	33.40	33.40	32.95	52.75
*No. 2 Foundry pig iron, Pitts.	34.40	34.40	33.95	55.55
*No. 2, Foundry pig iron, Chi.	33.00	33.00	33.00	55.00
Lake Superior charcoal, Chicago	37.70	37.70	37.50	59.50
Malleable, valley	33.50	34.90	34.45	55.55
Malleable, Chicago	33.50	33.50	33.50	55.00
**Southern, No. 2, Birmingham.	33.50	33.50	33.50	48.00
*Southern Ohio No. 2, Ironton	33.00	33.00	33.00	55.00
Basic, eastern Pa.....	32.00	32.00	32.00	51.00
**No. 2X Virginia, furnace....	33.50	33.50	33.50	51.90
**No. 2X foundry, Philadelphia	34.50	34.50	34.25	53.40
Ferromanganese, 70%, delivered	250.00	250.00	250.00	375.00
Bessemer billets, Pittsburgh....	47.50	47.50	47.50	93.00
Bessemer sheet bars, Pittsburgh	51.00	51.00	51.00	96.00
Open-hearth sheet bars, Pitts..	51.00	51.00	51.00	96.00
Open-hearth billets, Pitts.....	47.50	47.50	47.50	93.00
Steel bars, Pittsburgh.....	2.90	2.90	2.90	4.00
Steel bars, Chicago.....	3.17	3.17	2.90	4.50
Iron bars, Philadelphia.....	3.73	3.73	3.50	4.92

	Prices Aug. 28, 1918	Average prices July, 1918	May, 1918	Aug., 1917
Iron bars, Cleveland.....	$3.64	3.64	3.64	4.75
Iron bars, Chicago mill.....	3.50	3.50	3.50	4.50
Beams, Chicago	3.27	3.27	3.00	5.88
Beams, Pittsburgh	3.00	3.00	3.00	4.50
Beams, Philadelphia	3.23	3.23	3.18	4.92
Tank plates, Pittsburgh.....	3.25	3.25	3.25	8.80
Tank plates, Chicago.....	3.52	3.52	3.25	9.64
Tank plates, Philadelphia.....	3.48	3.48	3.43	10.17
Sheets, blk., No. 28, Pitts.....	5.00	5.00	5.00	9.00
Sheets, blue anld., No. 10, Pitts.	4.25	4.25	4.25	8.50
Sheets, galv., No. 28, Pitts....	6.25	6.25	6.25	10.25
Wire nails, Pittsburgh.....	3.50	3.50	3.50	4.00
Connellsville furnace coke.....	6.00	6.00	6.00	10.60
Connellsville foundry coke.....	7.00	7.00	7.00	12.70
Heavy melting steel, Pitts.....	29.00	29.00	29.00	34.60
Heavy melting steel, eastern Pa.	28.50	28.50	28.50	32.80
Heavy melting steel, Chicago..	29.00	29.00	28.90	35.50
No. 1 wrought, eastern Pa....	34.00	34.00	34.00	46.24
No. 1 wrought, Chicago.....	33.50	33.50	33.50	49.28
Rerolling rails, Chicago.....	34.00	34.00	34.00	46.25

*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.

(For Additional Prices See Page 530)

Coke Problem Bothering Furnaces

Operations Continue to be Interfered With by Lack of Supply and by Inferior Fuel—Regular Contracts Being Displaced by Allocations—Pig Iron Costs Being Considered at New York Meeting

Chicago, Aug. 27.—Although the situation has not become acute some delay in deliveries of pig iron to holders of contracts is being experienced because of allocations by the war industries board to northern makers. Where the melters thus favored have contracts for later deliveries the tonnages are applied on the contracts. Where the recipients are not regular customers of the furnace the allocated tonnages take precedence and delay deliveries to regular customers. The total tonnage thus placed is not large. Some contracting for 1919 delivery continues, though in small volume and only to regular customers with essential work. The total thus covered is a small fraction of the first half production. Southern makers are slow to book business for first half of 1919 and general selling is not expected to be done until late in the year. One interest recently yielded to pressure and booked an aggregate of about 15,000 tons for next year, this being about half the requirements of the melters represented. At least 100,000 tons is on active inquiry at present, in spite of the higher price of southern iron in this market, on account of the long freight haul. Some high-sulphur iron is coming from the south on consignment and is disposed of readily, as it usually carries high silicon also and can be used in many mixtures.

Refrain from 1919 Selling

New York, Aug. 26.—Allocations to eastern furnaces of a good many thousand tons of foundry iron again represented most of the business in this district during the past week. Among recent allocations were large tonnages of malleable which are to be furnished by a Buffalo district furnace to consumers in New England, New York state and Pennsylvania. No more selling of first half foundry iron has developed here. One eastern maker asked the war industries board if it would be permissible to book some first half business. The reply of the war industries board was in the negative and as a result this maker has refrained from booking any first half business. One of the Wharton Steel Co.'s furnaces has gone out of blast temporarily. The belief is growing that nonessential uses of pig iron gradually will be eliminated or severely curtailed and that there will be enough iron only to take care of essential uses. As a result, it is felt in some quarters that no advantage will result to furnaces which have made first half of 1919 sales. It is felt that if the buyers are in the essential class they will get their iron, whether or not they have covered at this time. If they are not in the essential class, they will not receive their iron even though they may have ordered it. It is stated, however, that most of the iron which has been sold for first half, is for such essential work, since the furnaces recognized the futility of booking future orders from any nonessential users.

Basic Tonnage Wanted

Buffalo, Aug. 27.—The demand for pig iron presses on Buffalo producers who continue to have nothing to do with orders unless they are allocated. There have been several inquiries during the past week for tonnages more

than 2000 and the representative of the government allocating board is endeavoring to place allotments totalling about 30,000 tons, principally basic iron. Coke supplies could be better, though the Connellsville region is understood to be producing well just now. Producers or iron in this territory are obtaining fair supplies of coke but not as large a quantity as they might desire and not sufficient to establish any stocks against the winter. One interest which manufactures its own coke is hampered in this operation by the shortage of coal which is making itself felt over this section now. The reason advanced for the coke shortage is the inability to get cars and labor. The 30,000 tons of basic about to be allocated in this territory is for early delivery.

Will Help Out Foundries

Cleveland, Aug. 27.—Urgent needs of the local users of foundry iron who have been shut off from their sources of supply by the changing over of the furnaces of the McKinney Steel Co. to basic, are to be relieved through action of the steel director. Arrangements have been made by the pig iron section to have the largest furnace of the McKinney company turned back on foundry for a period of one week. This will provide a supply of foundry iron to take care of the most pressing local requirements, some of which are of a war character. This changing over of the furnace will delay somewhat the fulfilling of the large order for basic iron for the British government which the McKinney Steel Co. has been filling. New business continues to be handled mainly through allocations. Distribution of orders by the pig iron committee in the week totaled 31,000 tons, including 11,000 tons of foundry 6800 tons of basic; 7200 tons of charcoal; 4300 tons of low phosphorus; 1100 tons of malleable, and some scattering. This increases the total allocations since May 1 to 780,000 tons. Outstanding requests for iron now before the committee are very numerous reaching from 75 to 100. These embrace among other lots, 30,000 tons of basic for several steelmakers and 6000 tons of foundry iron for Pacific coast shipyards for the Emergency Fleet corporation. Numerous inquiries for iron for next year continue to come from the general trade and some selling by the furnaces is being done subject to the usual conditions, where the buyer is engaged in war work. The leading charcoal producers are allotting to consumers for first half delivery such tonnages as the latter have under order for war work for the last half of this year.

Much Southern Iron Sold

Cincinnati, Aug. 26.—The southern furnaces are beginning to take notice of pleas from their old customers for first half iron. Some contracts have been signed but there has been no formal opening of books for that period. Probably 20,000 tons was doled out to a few favored consumers by one southern producer within the past few days. The uneasiness of consumers is portrayed in urgent appeals for shipments on contracts and in their desire to renew contracts that will expire October 1. There is no question as to the cost of the metal. It is simply a matter of getting it. Users engaged on strictly war work are somewhat encouraged over reports from authentic sources that they will be able to secure all the iron necessary to carry on their operations. This has allayed the fears of some foundries who are engaged in work that is directly and indirectly connected with the war department's activities. All basic iron is being distributed where most needed. No efforts are being made by either buyer or seller to make any future contracts and present indications point to the foundry iron reaching the same basis through increasing allocations.

No Surplus Expected

St. Louis, Aug. 24.—The past week has developed no change in the pig iron situation here other than to emphasize the scarcity with producers of nonessential articles. It is daily growing clearer that only plants filling government business may expect to secure raw material. Leading representatives of the trade in the nonwar category who have been to Washington and New York to canvass the situation bring the information that there is going to be no surplus pig iron. The nonwar demand is colossal and the plan of prorating any surplus would supply such small amounts that to attempt to continue operations would be hopeless. No end of inquiries for the first half of 1919 and the last quarter of this year continue to appear but producers are booking virtually nothing. They are unwilling to take orders for 1919 because of the uncertainties attendant upon delivery. Southern furnaces are flatly turning down exceptionally heavy inquiries. Deliveries from the south are excellent, the car situation being best in many weeks. Southern stocks are being whittled down rapidly under the steady outflow. Shipments from the north and east are in the main satisfactory, and war plants are getting ample supplies.

More Selling is Done

Philadelphia, Aug. 27.—Pig iron makers in this section are looking forward with interest to tomorrow's meeting at New York at which production costs will be discussed preliminary to later conferences at Washington on the matter of fourth quarter prices. Fairly extensive selling has characterized the market here during the past week. Fair tonnages of foundry iron were booked by Buffalo and Alabama furnaces for the first half of 1919, and considerable Alabama and Virginia iron were booked for this year's shipment. A large tonnage, particularly basic also was allocated to producers in this territory. The Donner Steel Co. has asked permission to divert one of its furnaces to foundry iron for several weeks in order to clean up certain foundry orders. It then will turn to the making of malleable iron. The other three furnaces of the company continue on basic. Plans of the steel director to supply sufficient tonnage of low phosphorus iron for all war needs by the importation of Spanish ore have been blocked temporarily by the lack of available ships. It will be remembered the pig iron administration recently arranged to bring in a considerable tonnage of this ore from Spain and this was to be converted by eastern furnaces. As a result of the obstacle over ships, the large furnace of the Eastern Steel Co. at Pottstown, which was put on low phosphorus, has been turned back to basic.

Production the Main Thing

Birmingham, Ala., Aug. 27.—With the exception of off-grade iron, not much selling of pig iron in the south, is to be noted. It is reported, nevertheless some producers have been booking a considerable tonnage for next year. Transportation conditions are quite satisfactory but production will not come up to all expectations. Raw material supplies, labor and other causes still are retarding factors. August furnace output in Alabama, however, will show some improvement over the July figures, it is believed. Furnace companies working on the allocated basic iron order for the British government announce that production is up to all expectations. This is where the off-grade iron is being produced. Not the least trouble is being experienced in finding a sale for the iron offered. Producers say there is no need to take on business for next year's delivery as the govern-

ment constantly is allocating business to this section. This means there will be no iron left for next year by the end of the last quarter of 1918, at the rate the government needs are appearing. Every attention is being given by the furnaces to production.

Coke Supply Smaller

Pittsburgh, Aug. 27.—While weather conditions during the past week have been favorable for blast furnace operations they were curtailed somewhat on account of a shortage of coke, this being the first time in a long period that lack of fuel has affected production to any extent. The shortage of coke was due largely to diversion from the Connellsville region at the direction of the fuel administration to furnaces which have not been getting their regular supplies from this source. One merchant furnace in this district was banked three days owng to a lack of coke, and others operated under checked draft. Shipments again, however, are moving forward, supplies are about normal, and the quality appears to be better. It is said that with possibly one or two exceptions all the merchant furnaces in the Pittsburgh district are producing steelmaking iron. The furnace of McKeefrey & Co. at Leetonia, O., which was blown out about June 1 went into blast Aug. 23 and is running on bessemer. Scarcity of iron is emphasized through the more careful apportioning of iron for steel works. It is reported that under a new plan, steel works with furnaces which heretofore have been getting pig iron for ingot molds from outside sources, now will have the tonnages represented in ingot molds subtracted from iron allocated them. Demand for both foundry and steelmaking iron still is heavy but inquiries are fewer by reason of the system of allocations. Consumers are appealing direct to the war industries board more generally than heretofore for iron. Blast furnace operators are greatly interested in the meeting tomorrow in New York of iron and steel manufacturers at which it is understood that prices for the last quarter will be discussed. Some pig iron makers insist that prices should be increased, saying their profits have narrowed greatly owing to the higher cost of raw material and increased wages and transportation charges. Some furnace interests are hesitant about making ore contracts because it is uncertain as to what condition the market may be in should government regulations end before iron made from their ore is sold.

Foundry Coke Supply Grows

Blast Furnaces Complain Stringent Supply of 48 Fuel Due to This Cause—May Operate Frick Beehive Ovens

Pittsburgh, Aug. 27.—Perhaps the outstanding feature in the coke market is the increasing supplies of foundry coke. Complaint is being made by some blast furnace interests that the tonnages of foundry coke considerably exceed the demand, and it is reported that the supply may be cut down and capacity diverted to the production of 48-hour coke for blast furnaces, some of which are operating on a hand-to-mouth basis by reason of the small supplies of coke. The supply of foundry coke is heavier now than it has been for months. It is said that some operators in the Connellsville region after filling contracts for furnace coke at high prices and which expired on June 30, turned to the production of foundry coke which sells for $1 a ton more than furnace fuel does. This situation appears to be partly responsble for the limited supplies of furnace coke and the surplus of foundry tonnages. The recent diversion of tonnages of furnace coke from the Connelsville region to a consumer who formerly got supplies from other sources, also has been an important factor in cutting the supply of blast furnace fuel in this district. It is understood that no coke tonnages have been commandeered during the past week by the fuel administration. With a view to increasing the output, the administration is planning to have the Frick beehive ovens in the Connellsville region blown in again. It will be recalled that recently the Frick company blew out its beehive ovens and diverted coal formerly consumed by them to the by-product coke plant of the Carnegie Steel Co. at Clairton. According to reports the Frick company will furnish coal for the beehive ovens the same as it did heretofore but the fuel administration will be called upon to supply coal for the Clairton plant. In view of the shortage of coal the administration may experience difficulty in finding the necessary source of supply. Production for the week ending Aug. 17 totaled 326,610 tons as compared with 319,010 tons for the preceding week, according to *The Connellsville Courier*.

Production Is Better

Cincinnati, Aug. 26.—Cooler weather has materially aided in the production of coke. Labor shortages, however, are vexing and cause some letup in production. The labor problem is one that is now of more interest than any other confronting coke operators. The responsibility for solving this problem is about equally divided between the coal mining operators and the operators of coke ovens. The oven operators are doing all they can to supply their customers and so far have been successful. A number of complaints have been registered from pig iron furnaces, but on investigation most of these were due to delays enroute, and in a few instances there has been trouble in obtaining labor for loading the fuel.

Deliveries Are Maintained

St. Louis, Aug. 24.—Deliveries of coke in this district are fairly well maintained, despite the extreme hot weather which has prevailed in the main producing sections. All war plants have full supplies for current use, and minor accumulations are reported in rare instances. These, however, are attributed more to slowing down on account of labor difficulties and hot weather than any abundance of supply. Some contracting is going on currently, but eastern ovens are not courting business, especially into 1919. By-product plants in this region continue to operate at or close to capacity. Transportation facilities are working well, and the movement of coal in the main is satisfactory. Labor is the weak spot in the process of production.

Coke Production Steady

Birmingham, Ala., Aug. 27.—Coke production in Alabama fluctuates but little as every oven in shape is being operated. Weather conditions, coal supply and the labor situation from time to time are felt but, generally speaking, there is only a little difference, week after week, in the oven output. Every ton of coke that can be manufactured is needed. Coke producers say very little of contracts, efforts being given to output and shipment. Some little coke is still going from this district into Mexico and to the west for smelting plants. Actual work has started on the new by-product plant of the Sloss-Sheffield Steel & Iron Co. and in the next few days the work will be started on the 50 ovens to be constructed for the Birmingham Coke & By-Products Co. near Boyles.

No Relief of Scrap Need

Demand in Practically All Districts Continues to Exceed Supply—Pittsburgh Draws on Chicago for Tonnage

FOR COMPLETE SCRAP PRICES SEE PAGE 530

Chicago, Aug. 27.—Scarcity of practically all grades of iron and steel scrap, except rolling mill grades, continues. Steel rails for rerolling are offered only occasionally in small tonnages and mills which bought months ago find deliveries on these contracts much behind schedule. Heavy melting steel is not coming out in the usual volume and consumers stand ready to take all that is offered. Those who hesitate about paying commission have more difficulty in getting supplies than those who will remunerate the dealer. Rolling mill grades are fairly plentiful and some consumers have had tonnages offered them at the market without request for commission. Greater demand exists for foundry grades and No. 1 cast and similar material is in much demand with prices somewhat higher. The Chicago, Burlington & Quincy will close this week on 2500 tons of which 670 tons are rerolling rails. The Chicago, Rock Island & Pacific offers 2300 tons.

Buy From Chicago District

Pittsburgh, Aug. 27.—An open-hearth consumer in this district has bought 2500 tons of machine shop turnings and 2500 tons of cast iron borings for quick delivery which are to be shipped from the Chicago district. The user is engaged on important government work and was unable to locate tonnages of these grades in this district. A permit was granted to make the shipment from the Chicago territory. The price paid was the government maximum of $19 for each of the two grades, plus the commission of 3½ per cent and the freight differential of $4.05 per ton. Demand for practically all grades of scrap continues strong. There is scarcely a large consumer who would not take heavy tonnages if they were available. The chief inquiry is for heavy melting steel and guaranteed low phosphorus scrap but there is also an active demand for machine shop turnings, heavy shell turnings and No. 1 cast scrap. Stocks of scrap in some dealers' yards are considerably lower than they were one year ago, while in others they are about the same as they were at that time owing to the ability to make replacements. Work of assorting old material in yards has become a serious problem by reason of the scarcity of labor. The Pennsylvania railroad is offering two lists, one of about 16,000 tons and the other of 2100 tons on which bids will be received up to Sept. 3.

Recent Ruling Pleases

Buffalo, Aug. 27.—Consumers of this territory are glad to know that the subcommittee on scrap iron and steel finally has recognized the evils which have grown out of the practice of assorting supplies for the purpose of selecting a better grade and of selling it under the head of "unguaranteed low phosphorus," at a price higher than $29. A Buffalo dispatch to THE IRON TRADE REVIEW of August 8, it will be remembered, called attention to the unsatisfactory results to open-hearth furnaces of allowing electric furnaces to pay more than $29 for low phos, while the open-hearth plants were prevented from paying this price. The curbing of the practice of sorting scrap to satisfy the requirements of certain mills will have the effect, it is claimed, of insuring a better supply of heavy melting steel, a grade which is practically impossible to get in sufficient quantities at this time. The market continues strong in every grade, with the government maximums ruling in all prices.

Yards Are Sensitive

Cleveland, Aug. 27.—The shortage of labor in scrap iron and steel yards here has become so pronounced that some dealers are reported to have been compelled to turn down shipments of unsorted material. Yard interests feel they are doing the iron and steel industry a particularly good turn in putting through this material when the profits in many instances are not very attractive, and some show sensitiveness over the rebuke of the subcommittee of scrap relative to the sale of border-line unguaranteed low phos. They claim they have their yards for the purpose of sorting material, and that they are entitled to comb over shipments closely. Naturally, they agree that only such steel that can meet the exact requirements should be sold for $34. The demand for heavy melting steel and low phos continue in excess of supply. Railroad malleable, small drop forge flashings, bundled sheets and No. 1 busheling are somewhat firmer.

Shortage Is Unprecedented

Cincinnati, Aug. 26.—From all reports in hand now there appears to be a shortage of scrap that will be unprecedented. Dealers state that they are unable to get enough scrap to fill their customers' orders, and that they constantly have to draw on reserve supplies. These reserve supplies are diminishing at a rapid rate. Stove plate is regaining a little of its strength but is not yet quoted at the maximum price. Both No. 1 wrought and No. 1 machine cast are very firm.

Every Pound In Demand

St. Louis, Aug. 24.—There is an urgent demand for everything in the way of scrap iron and steel in this market, with tonnages increasingly difficult to secure. Dealers declare it is virtually impossible to get hold of material, and there is every indication that the usual sources of supply have been milked dry. Consumers of all sorts are clamoring for scrap, especially those cut off from pig iron. Stocks of consumers have been greatly depleted, and they are willing to purchase everything offered at reasonable prices. With the exception of rolling mills, everyone is willing to pay commissions. Yard stocks are very low. The labor situation is the worse since the war, and is growing more aggravated instead of better. Prices are moving upward, and dealers lists show several radical advances during the past two weeks. More and more grades are at the government maximums. Steel is especially strong. Supplies are virtually nil. Cast scrap and foundry grades generally are wanted.

Better Feeling Noted

Birmingham, Ala., Aug. 27.—While local consumers will not pay maximum prices allowed by the government, a better feeling is noted in the scrap industry in this district. Some buying activity also is noted. The visit to the district during the past week of a prominent old material dealer from the middle west is believed to be significant and results of his investigation will likely become apparent this week. Old material prices show but little change for the week.

Labor Retards Market

New York, Aug. 27.—Shortage of

labor remains an important factor in the scrap market in this district, and this with the continuation of an active demand is keeping offering supplies at low point. The demand is strong for virtually all grades. All prices are firm at the government maximum.

Urge Use of Scrap

Philadelphia, Aug. 28.—Demand for scrap is keeping up accurately but dealers can secure only a portion of what is wanted. This applies to all grades. The dealers have run across numerous instances where the pig iron section of the steel division has requested foundries to use more scrap and less pig iron. They point out that this request is not possible of general adoption because of the cast scrap scarcity. It is learned that some dealers continue to ship turnings to blast furnaces without permits, although they claim that material thus delivered has been unsuitable for mill use. Most of the dealers are observing the embargo on holding material unsuitable for the mills, instead of applying for a permit to ship. They prefer to hold up shipments rather than divulge the sources of this scrap. Huge sales of turnings to the mills were reported last week in the Philadelphia market.

Subsidiary Contracts Get Automatic Priority

Government authorities have given to the mills a new interpretation of the application to subsidiary contracts of section 7 of circular No. 4 issued by the priorities division which gives orders placed by the war or navy departments or the Emergency Fleet corporation an automatic classification of A-5. This priority classification, it is held, may be extended to subsidiary contracts if the subcontractor makes affidavit that he will use for the specific army, navy or Emergency Fleet contracts and no other, the material which he requests. This rating before becoming effective must be indorsed by the government official who indorsed the original A-5 classification.

Prior to this interpretation the understanding had been that automatic priority numbers apply to subsidiary orders only where such work was used for the purposes set forth in section 8 of circular No. 4. The government orders taking automatic classification as covered by section 7 it then was held required special application for each subsidiary need.

Stop Mills to Save Steel

Changing Back of Rail Mills From Shell Rolling Intensifies Problem of Steel Shortage—Finishing Operations Reduced

Pittsburgh, Aug. 27.—Pressing and growing demands of the government for steel for the production of shell rounds, rails and plates have made the scarcity of steel for consumers engaged in other lines still more acute. The program of the war industries board involves early and large shipments of these tonnages and makes necessary several sweeping conversions in the steel industry. Rail mills now making shell rounds will be shifted back to their original line, and operations of pipe, merchant bar and wire mills will be further curtailed in order to provide greater tonnages for projectiles and plates. As a result, the scarcity of billets, sheet bars, skelp and other semifinished products for other lines has become still greater. A government requirement for 2600 tons of wire rods is said to have been allocated by the subcommittee on wire products of the American Iron and Steel institute.

Discard Billets Sold

New York, Aug. 26.—The only sales of semi-finished steel which have been reported in this district of late, involved several thousand tons of 4 x 4-inch billets rolled from shell steel discards.

Strip Orders Not Heavy

Pittsburgh, Aug. 27.—Makers of cold and hot rolled strip steel report that no heavy orders are being placed. The restrictions placed on the output of pleasure automobiles has shut off business, except in small lots, from this source. Mills are operating at about 65 per cent of capacity.

Further Decline

Shown in Production of Sheets—Book Tonnage in East

Pittsburgh, Aug. 27.—Further decline in the output of sheets was made during the past week. The falling off is due to the shortage of sheet bars, which, it is believed, will become still scarcer. Operations of the sheet industry of the country are only slightly in excess of 50 per cent of capacity. With shipments already less than new business, the government continues to place heavy requirements, one lot distributed recently being unusually large. The pooling of sheet bars has brought about operations that are more nearly uniform, although there are instances showing considerable disparity among some mills. Bookings taken are understood to be so great that they will call for operations through November. Makers of passenger automobiles will require fair sized lots of sheets to round out inventories they have on hand, which the war industries board has agreed to, but difficulty may be experienced in getting a position in the preference list to insure delivery of these tonnages.

Big Tonnage Booked

Philadelphia, Aug. 28.—An unusually heavy business in sheets for August delivery has been booked in this district by a western maker. These orders run into many thousand tons and include blue, black, galvanized and to some extent, shell discard sheets. This business includes both A and B orders, with the A tonnage predominating. All C orders are being refused. It is estimated that the A orders on sheet mill books are sufficient to take up practically the entire output for two months.

Selling Few In West

Chicago, Aug. 27.—With sheet mills operating at 30 to 40 per cent below capacity on account of lack of raw material and labor conditions, consumers find it difficult to place business. Practically nothing is being placed on books at present except on allocations or under the automatic priority plan, which in most cases place the buyer too far down to give hope of receiving material with any degree of promptness.

Operations Vary Considerably

Youngstown, O., Aug. 28.—Sheet mills throughout the valley are averaging under the 75 per cent mark, which is the maximum that has been fixed by Washington. The leading independent this week has all of its sheet mills and its sheet bar mills off which is indicative of continued irregular operations. Another valley interest has seven mills out of 10 going. Another is considerably below the 75 per cent mark, due to the shortage of sheet bars. One maker who has been experiencing much difficulty in obtaining bars has had better luck recently and this week is operating at about the maximum. This interest still is compelled to roll some sheets from high-carbon bars.

Bar Concession Hangs Fire

Implement Manufacturers Applying For Reported $5 Reduction Held off—Production Overtakes New Government Orders

Chicago, Aug. 27.—Although the impression is given in some quarters that the concession of $5 per ton on steel bars to agricultural implement makers has been granted, nothing definite apparently is known in this district in regard to this matter. It seems, if the concession has gone through, it is being closely guarded, but most makers believe that it is still under consideration. Government allocations recently have been on a less scale than was the case during midsummer and at present new business is about equal to production for several weeks previously. Mills rolling the bars from rails find themselves able to take only small tonnages and much demand from manufacturers and reinforced concrete builders is being refused. One mill engaged entirely on rolling bars from discard billets, which are being taken by the trade in place of rolled bars, even though they are quoted at 2.90c, Pittsburgh, the equivalent of 3.17c, Chicago, compared with 3.00c, asked for rail steel. The discard bars also command extras, which do not obtain on bars rerolled from rails. Bar iron mills are in much more comfortable situation at present than during July and early August, as the regular trade is coming in with contracts for their present requirements. The lull in demand from ordinary users was long continued but appears to be at an end. All contracts are for immediate delivery and wth the export business recently taken and heavy demands for chain iron from the east, considerable tonnage is now in prospect.

More Steel To Be Diverted

Pittsburgh, Aug. 27.—Merchant bar mills whose operations have been curtailed greatly owing to the diversion of steel for the production of more pressing requirements, including shell steel and plates, will have their output cut further by reason of the greater demands for plates, projectile steel and rails. So far as known, no final agreement has been reached regarding the proposed reduction of $5 a ton for steel bars for the implement makers, and because of the increasing sentiment against this proposal it now is believed by some in the trade that the concession will not be granted. Makers of steel bars are engaged principally on government work and are committed for several months ahead. Iron bar manufacturers also are heavily booked on government orders, although it is reported that some of them could take limited tonnages of commercial business.

No Concessions Allowed

Cleveland, Aug. 27.—None of the implement manufacturers in this district have been granted by the mills the proposed $5 reduction on their steel requirements effective July 1. Several of these customers, having noted the reports that the concession had been agreed upon, have applied to the mills for the special allowance but have been advised by the latter that the matter remains in abeyance. In some cases the implement manufacturers themselves have not been favorable to the reduction because of the adjustments it will carry with it since already some of the dealers have asked for a similar concession on the farm tools they have in stock. The exact status at the present time of the proposed price reduction to the implement trade remains in doubt. It is apparent, however, from the general confusion and the absence of definite instructions to sales agents from mill headquarters that no agreement between the steel producers and the implement manufacturers over this matter has yet been put into effect. Demand for bars and small shapes rolled from shell discards continues considerable especially from the jobbers. One inquiry for 1700 tons of these forms is current from a local buyer. For extensions to the Goodyear Tire & Rubber plant, Akron, O., 150 tons of reinforcing bars are wanted.

Bolt Makers Full

Chicago, Aug. 27.—Little contracting for bolts and nuts is being done as mills are well filled and feel that they should not take on further business at present. Regular customers needing small quantities are able to place their requirements but as a general proposition mills are letting things rest as they are. Those who have their own raw material supply have encountered no difficulty in this respect, but those who must buy in the market have been unable to obtain as much as they need.

Operations Are Cut

Pittsburgh, Aug. 27.—Makers of cold rolled shafting are producing direct and indirect government requirements calling for big tonnages, the larger sizes being in most pressing need. Their operations have been cut to about 65 per cent of capacity owing to the shortage of steel.

Demand Has Fallen Off

Pittsburgh, Aug. 27.—Demand for hoop steel has fallen off, some of the largest consumers, including the cooperage interests, having covered their requirements. There is only light inquiry for bands also. Mills are operating at about 60 per cent of capacity.

Softer Prices

Appear In Ferrosilicon—Ferro and Spiegel Inquiry Appears

New York, Aug. 26.—Prices on 50 per cent ferrosilicon continue to reflect a downward tendency. Business done during the past few days included one contract involving 200 tons per month over the remainder of this year which was closed at $150 delivered. In another instance an offer of 100 tons per month over the remainder of this year and the first half of next at $150 delivered, failed to take the business. The market may be quoted at $147.50 to $150, delivered, and it is possible that in exceptional cases, this range might be shaded.

Buying of ferromanganese has tapered off materially and sales made by sellers in this district during the past week involved only a few hundred tons. Consumers, as a rule, now are well covered ahead. There are a number of exceptions, a few larger consumers particularly remaining uncovered. It is expected, however, that these interests will come into the market before long. Ferromanganese continues to be quoted at $250, delivered, which represents the market on all positions.

Buying of spiegeleisen also has been quiet during the past week and sales aggregated only a few hundred tons. The market on spiegeleisen continues strong at $75, furnace, for 16 per cent metal.

Market Is Quiet

Pittsburgh, Aug. 27.—The market for ferroalloys has been quiet during the past week. Few sales of 70 per cent ferromanganese and 16 per cent spiegeleisen have been made but

involved only small lots. It is reported that a consumer in this district may soon come into the market for between 2000 and 3000 tons of ferromanganese, but no definite inquiry has been put out. Demand for 50 per cent ferrosilicon is dull.

Tonnage Under Negotiation

Cleveland, Aug. 27.—Several thousand tons of ferromanganese and several thousand tons of spiegeleisen for last half of this year and for the first half of 1919 are being negotiated for by several consumers in this district. The McKinney Steel Co. has been prematurely reported as having entered the market for 6000 tons of spiegeleisen for last half shipment. This buyer has issued no inquiry, though it will do so soon and it is stated the tonnage will not be of the amount given.

Interest in 1919 Delivery

Chicago, Aug. 27.—Inquiry for ferromanganese for 1919 delivery is increasing. Two inquiries for about 500 tons each were current recently. One was withdrawn and the other, from an independent steelmaker, is understood to have been closed. The local maker has practically finished operations on 30 to 40 per cent metal and will resume shortly on standard ferromanganese.

Stocks Are Shrinking

New York, Aug. 26.—Warehouses and jobbers in this district are greatly concerned over the extent to which their stocks have shrunk during the past couple of months. None of these interests now have a stock worthy of the name. One large interest, at the present time has in stock only three sizes of channels and has no assurance when it will receive deliveries of other sizes. Structural shapes over three inches are very scarce among the warehouses. In bars, these interests have fair stocks in the smaller sizes, but have no rounds over 1⅞-inches in diameter. Stocks of blue annealed and galvanized sheets are nearly exhausted, while stocks of black sheets, although not so depleted as blue annealed and galvanized, are slender. Some of the warehouses recently have received odd lots of plates from the mills and as a result they have better stocks than before. Owing to the fact that these plates had been cut to size at the mills, the warehouses are not doing any additional cutting but are furnishing the dimensions nearest to those wanted.

Plate Mills at Top Mark

Ship 117,000 Tons in Week or up to Maximum Rated Capacity—Further Increase Planned

Philadelphia, Aug. 27.—A considerable improvement in the plate production is reflected by current shipment figures. The mills of the country combined, shipped 117,000 tons during the week ending Aug. 17 compared with 101,000 tons for the week ending Aug. 10. The record of 117,000 tons weekly is equivalent to more than 6,000,000 tons per year and is practically up to the rated capacity of the country. New plate mills at Claymont and New Castle, Del., go in next week and the two new mills of the Brier Hill Steel Co. about the middle of September. A round tonnage of ship plates for England is being distributed for delivery about the end of November. A large portion of this order went to the Worth Steel Co. An exporter just returned from Japan states that the plate scarcity there has become most acute and that he would have no difficulty in selling 500 tons at 50 cents per pound out of stock if he had the material in warehouse in that country.

To Increase Production

Pittsburgh, Aug. 27.—Still greater output of plates is called for by the war industries board. This is making necessary a heavier diversion of steel from other lines and the conversion of more mill units to this class of production through the changing of rolls. New plate making capacity soon will be in operation and the present estimated output of 500,000 tons a month will be appreciably increased. Capacity engaged is working exclusively on government orders, and deliveries to such consuming sources as shipyards and carbuilding plants are heavy and apparently keeping up well with demands. No details are available here regarding the report that an order for about 20,000 high and low side gondola cars has been distributed.

Car Plates Coming

Chicago, Aug. 27.—With government allocations of ship material being made on a much lessened scale, than earlier in the year, mills are able to keep even with demands but expect that shortly they will be given considerable tonnages of plates for the 30,000 small cars to be built for use in France. Allocations of material for the first 10,000 seem to have been started, but comparatively little has been actually placed with the mills.

Barges Are Placed

Cleveland, Aug. 27.—About 3500 tons of steel, principally plates, will be required for seven steel barges for the government placed with the Interlake Engineering Co. of this city. The material will be supplied through the Emergency Fleet corporation. The boiler steel for ocean-going tugs which are to be built by local yards is still to be placed.

Pipe Steel

Being Directed To Plate Mills—Government Buys Cast

Pittsburgh, Aug. 27.—Pipe mills are being drawn on more heavily for steel to increase the production of plates. Makers of both iron and steel pipe are committed heavily on direct and indirect government work and are unable to accept commercial business. Jobbers are having difficulty in getting adequate tonnages to replace stocks, although mills are supplying as much tonnage as possible.

Operations Continue Low

New York, Aug. 27.—Difficulties in getting sufficient supplies of pig iron and labor are the besetting problems of the cast iron pipe foundries. Production remains as in recent weeks, around 50 per cent of capacity and this is devoted almost entirely to direct and indirect government work. Some further buying is being done for the housing project at South Bethlehem, Pa., but most of the requirements have been covered. About 1000 tons for the Bridgeport, Conn., housing plan have been purchased.

Place Orders For Ships

Youngstown, O., Aug. 28.—Considerable pipe is being placed among valley mills, the specific orders not being large but the aggregate is sizeable. This condition results from the needs of the Emergency Fleet corporation in fitting out its vessels with steam heating systems.

Government Buys Most

Chicago, Aug. 27.—Government orders for cast iron pipe for camp, cantonment and nitrate plants form practically the entire business now being booked.

Nitrate Plants Are Awarded

Government Places 12,000 Tons With Fabricators and 8000 Tons Remain Undecided—More Lettings in West

New York, Aug. 26.—With the aid of the government, the Air Nitrates Corp., New York, has succeeded in placing approximately 12,000 tons of fabricated steel for the erection of the proposed nitrating plants at Toledo and near Cincinnati. About 8000 tons still are required for these plants and this tonnage is to be placed shortly. Other tonnages in the structural market here during the past week were not of much moment. Those placed included additional requirements in connection with the government pier shed at Norfolk, the storage warehouse at Norfolk and bridges for the New York Central railroad. Activity in plain material has died down. The buying movement which was induced from fabricators and jobbers by the recent priority ruling of the war industries board has about terminated. Jobbers and fabricators now are pretty well covered ahead but this does not imply that they well get all their requirements promptly. Mills say that the best they can hope for is deliveries of small quantities at a time.

Bethlehem Places Tonnage

Philadelphia, Aug. 28.—An award of 12,000 tons of fabricated steel for extensions at Sparrows Point has been made by the Bethlehem Steel Co. Otherwise the structural situation is featureless. Allocations of plain shapes are being made steadily. Other sales, however, have dropped off. Western mills have not participated in taking orders from fabricators and jobbers, owing to the large tonnage of higher priority rating which they have on order. The best they can do for fabricators and jobbers is to classify old orders as B-4.

No Heavy Orders Placed

Pittsburgh, Aug. 27.—While no large government demands on fabricators have come out during the past week, old orders are so heavy as to tax capacity. The shipyards are still getting the preference in the matter of shipments. As a result of this, deliveries to other essential work have fallen off to some extent, which has caused some complaints. Close check is being kept on tonnages going to shipyards. Further government orders for fabricated steel are in contemplation but no business has actually been placed recently. Private construction is being discouraged to such an extent that such work is constantly tapering off.

More Turntables Ordered

Chicago, Aug. 27.—Railroads predominate in structural tonnage placed during the past week in the west, with some industrial additions taking a moderate tonnage. No less than eight turntables from 90 to 100 feet long have been ordered recently to keep pace in increased size of locomotives. The Wabash railroad takes four and the Minneapolis, St. Paul & Sault Ste. Marie railroad an equal number. The General Motors Corp. has placed 1397 tons for a foundry building at Saginaw. Demand is still strong for structural shapes for fabricating shops engaged on ship parts for the Emergency Fleet corporation. The proposed munition plant at St. Louis, which was under consideration by the American Car & Foundry Co., has been given up by that interest and is now being planned by the Laclede Gas Light Co. An inquiry is out for 1600 tons for these buildings.

CONTRACTS AWARDED

Tractor manufacturing plant for Janesville Machine Co., Janesville, Wis., 500 tons to Worden-Allen Co.

Addition to tractor plant of General Motors Corp., Saginaw, Mich., 175 tons to Worden-Allen Co., 1400 tons in all, required for this work.

Foundry building for the General Motors Corp. at Saginaw, Mich., 1397 tons, to Lewis Hall, of Detroit, and the Central States Bridge Co., of Indianapolis.

Structural steel for shops for the Chesapeake & Ohio railroad, Huntington, W. Va. and Richmond, Va., 803 tons, to the Richmond Structural Steel & Iron Works, Fort Pitt Bridge Co. and Central States Bridge Company.

Four 100-foot turntables for the Wabash railroad, Moberly, Mo., 369 tons, to the American Bridge Co.

Monorail system for shell forging plant, Stillwater, Minn., for the Twin City Forge & Foundry Co., 286 tons.

Four 90-foot standard turntables for the Minneapolis, St. Paul & Sault Ste. Marie railroad, 208 tons to the Milwaukee Bridge Company.

Buildings for Air Nitrates Corp., Toledo and near Cincinnati, 12,000 tons placed with independent fabricators, 8000 tons pending.

Second story addition to government pier shed at Norfolk, Va., 900 tons to American Bridge Co.

Bridges for New York Central, 270 tons to American Bridge Co.

Storage warehouse for government at Norfolk, Va., 900 tons to independent fabricators.

CONTRACTS PENDING

Munitions plant for the Laclede Gas Light Co., St. Louis, 1600 tons. Bids being taken.

Bridge for Pennsylvania railroad, 1100 tons, bids being taken.

Addition to the plant of the Goodyear Tire & Rubber Co., Akron, 150 tons reinforcing bars, bids being taken.

Warehouse for Armour & Co., Buffalo, 300 tons reinforcing bars, bids being taken.

More Rails

Wanted By Pershing—40,000 More Cars For France Pending

Pittsburgh, Aug. 27.—According to reports reaching this district, General Pershing has asked for 150,000 tons more of rails for shipment to France, and the railroad administration soon will distribute large requirements. One estimate is that 250,000 tons will be wanted before cold weather sets in. Apparently it is because of these large requirements for early shipment that the war industries board proposes to have rail mills now engaged in the manufacture of shell steel, shift back to their original line of production. Active demand still is being made for small spikes for coal mines and moderate sized tonnages are being apportioned to them. Light rails for coal mines in this country and for export also are in good demand but the supply is inadequate. Some makers are so short of steel that they are no longer able to quote on this business. Increased production of shell steel, however, will mean greater tonnages of discard steel and part of them, it is reported, may be used for the production of such lines as light rails.

Car Allotment Announced

New York, Aug. 27.—Allotments of the 20,000 cars for France by the government includes 16,570 gondolas of which 5400 will be built by the American Car & Foundry Co., 4500 by the Standard Steel Car Co., 2800 by the Pressed Steel Car Co., 2200 by the Haskell Barker Car Foundry Co., 600 by the St. Louis Car Co., 500 by the Pullman Co., 500 by the General American Tank Car Corp., and 70 by the Liberty Car Co., 2000 flats of which 1000 have been placed with the Standard Steel Car Co., 700 with the Pullman Co., and 300 with the Standard Car Construction Co.; and 800 tank cars equally divided between the General American Tank Car Corp., and the Standard Car Construction Co. The deliveries on these cars have not been definitelly settled.

Light Rails Placed

Cleveland, Aug. 28.—A lot of 11,000 tons of 19-pound rails for the French government has been allocated to the

Cambria Steel Co. for shipment to the Lorain Steel Co. The latter will work up these rails into track sections.

A new inquiry is pending for 30,000 to 40,000 tons of light rails.

Axle Orders Placed

Philadelphia, Aug. 26.—The railroad administration has had allocated orders for 9600 4¼ x 8-inch car axles. The Illinois Steel Co., the Cambria Steel Co., and the Donner Steel Co. will furnish 3200 each.

Additional orders for 40,000 cars for delivery to the United States railways in France are to be placed soon by the railroad administration. These are supplementary to the 20,000 high and low side gondolas recently distributed among leading builders.

Rail Production Lags

Chicago, Aug. 27.—Although rail mills have heavy tonnages for the government to use in France, they find themselves unable to turn out rails as readily as they desire, to meet deliveries. The whole matter rests in the division of ingots between plate mills and rail mills, in order not to slow up production of either in a way to interfere with shipbuilding and military railroad needs. Rail mill production is considerably larger than was the case earlier in the summer but has not yet reached a volume sufficient to meet delivery requirements.

Output Grows

In Tin Plate Due to Cooler Weather —Steel Adequate

Pittsburgh, Aug. 27.—Cooler weather has brought about an increase in the production of tin plate. Sheet bars still are being supplied to makers in adequate quantities and in view of the demands made, producers are hoping that they will not face a shortage of steel. Supplies of tin plate are meeting fully the requirements of can makers, the heavy output in July, which set a record for that month having been an important factor in this direction. The month of August will show a considerable falling off as compared with July, but probably will be about normal as compared with the same month in preceding years. July usually makes the poorest showing of the year but unprecedented conditions this year resulted in a record production. Labor was unusually steady, there were no wage disputes and mills did not shut down for repairs.

Wire Output Cut Deeper

Diversion to Shell Steel Becomes More Extensive—Difficulty in Filling Orders for Wire Products More Apparent

Pittsburgh, Aug. 27.—The production of wire and wire products has been greatly curtailed, but it is to be decreased further, and steel which has been used for these lines will be diverted to the manufacture of shell steel. One manufacturer in this district whose operations are about 60 per cent of capacity will further cut the output of wire and wire products and turn to the production of shell steel. This producer also will increase the output of seamless tubes, for boilers of the Emergency Fleet corporation. Another wire manufacturer, operating at about 50 per cent also will curtail in order to increase the output of shell steel. As previously stated, the American Steel & Wire Co. will turn to the production of 3-inch shell rounds at its Donora, Pa., works. It is reported that it will produce about 20,000 tons monthly of such forms. These heavy withdrawals of steel from wire plants raise an extremely serious problem in supplying the demand for wire and wire products. It is reported that difficulty has been experienced by the subcommittee on wire and wire products of the American Iron and Steel institute in allocating orders for 21,000 tons of plain wire for export to France, 100,000 kegs of wire nails, 8d to 10d, for prompt shipment, part of which is for use in this country by the war department, and a portion for shipment to France and 2600 tons of wire rods. The government wants the wire shipped in September, October and November, but makers have asked for a longer delivery. It is understood that most of the wire rods are to be of high carbon for the manufacture of wire springs and wire rope. The reducing of the output of wire mills also will make it still more difficult to replace jobbers' stocks.

Already there is a marked shortage of wire and nails and manufacturers are compelled daily to decline orders, which, under ordinary conditions, would be unusually attractive.

Nail Orders Distributed

New York, Aug. 26.—About 25,000 kegs of wire nails for shipment to army camps and cantonments in this country, have been allocated during the past 10 days through the American Iron and Steel institute subcommittee. These nails are to be made by the plants nearest the consuming points. Additional government orders for nails are pending. Several orders for barbed wire also have been allocated recently, but these involved only a small tonnage in the aggregate.

Big Orders Pending

Cleveland, Aug. 28.—Orders aggregating 56,000 tons of black and painted barb wire are about to be allocated through the wire committee. These orders will include 34,000 tons for the war department and 22,000 tons for the French government.

Cautions Jobbers Agreed Prices Must be Named

Sales of bar iron should be reported separately from sales of bar steel, but in the same column, if possible, by jobbers in making monthly reports to the war industries board. The same policy applies to iron pipe, tonnages of which cannot be replaced with tonnages of steel pipe. Instructions to this effect are carried in a letter written by J. Leonard Replogle, director of steel supply to George D. McIlvaine, secretary of the National Pipe and Supplies association, Pittsburgh.

Mr. Replogle calls attention to the fact that monthly reports have been received in large quantities from all over the country but that many of them are not accurately made out, and details are outlined to show just how the reports should be prepared. Jobbers desiring to use old orders placed on the books some time ago as part of their replacement can do so, but cannot order a replacement equal to his sales, but a less amount in order to take proper care of old orders. Mr. Replogle also takes occasion to caution all jobbers to adhere strictly to the warehouse prices agreed upon by the war industries board and says that those who persist in charging higher than these prices will find themselves cut off from their sources of supply if they insist on doing so.

The Industrial Electric Furnace Co., Chicago, builder of the Snyder furnaces, is installing a five-ton unit in the plant of the Zimmerman Steel Co., Bettendorf, Iowa. This furnace is of the three-phase type and is designed for acid operation.

Will Define Policy on Essentials

Government to Co-ordinate Present Methods for Determining Useful and Non-Useful Industry Under War Conditions—Greatly Extended Preference List About to be Announced—Grip Over Basic Elements is Complete

WASHINGTON, Aug. 27.—Clearer-cut and better-defined ideas of the government's policy concerning essentials and nonessentials probably will follow announcement soon of a new list of preferred industries which is being compiled by the priorities division of the war industries board. Declarations by members of the board and the board's own public statement of the coming of the list indicate the compilation will be more comprehensive. It is expected the list and whatever announcement may accompany it will go a long way toward settling the question which has been in industrial and financial minds for months.

Almost a year ago the statement was made as coming from the fuel administration that a list of nonessential industries would be compiled. Later it was reported this list had been completed, but for obvious reasons had been reserved solely for governmental eyes and when not in use was reposing in the innermost crevice of Fuel Administrator Garfield's strong box. The statements concerning the list were ill-advised and the list ill-named, it since has been conceded. Practically all officials admit the government started off on the wrong foot when it talked of nonessentials.

Shy at Nonessentials

Since that time the term "less essentials" has been substituted and belated efforts have been made to make the distinction as "war essentials," "important and necessary non-war work," and other like phrases, with little or no attention in oral or written statements to socalled non-essenials. Various steps have been taken to define essentials, not in so many words, but in the compilation of certain lists or classifications of important industries or plants.

The first public list of essential industries was issued by the priorities board April 6 when preference list No. 1 was formally announced. This list contained 45, some of them interrelated, industrial classifications and was drawn up for the purpose of guiding government and public agencies in handling shipments of coal and coke. Others quickly adapted the list to their business, however, and industries which were not classified had more or less difficulty in receiving attention.

This list, while the first to be made public, was really the second. On March 27 the priorities board had prepared a "general classification of purposes demanding preference treatment." For some reason this was kept quiet by the board but later was sent broadcast by the national chamber of commerce and received its first publication in THE IRON TRADE REVIEW of May 30. Then this classification of purposes, or general purposes list as it has been called, was embodied in the famous steel resolution of June 6. This employment of the list was its first public use by the war industries board.

Now the war industries board has made the following announcement:

The war industries board, under the direction of Bernard M. Baruch, chairman, working through the priorities board, headed by Judge E. B. Parker, is formulating a new list of preferred industries. Although it is not yet in publishable form, it can be stated that the list will be almost twice as long as the one issued last April, which contained about 32 classes.

The amplification has been due to the widely expanded war needs and, at the same time, to allow for the pressing demands of civilian origin.

The preference list is a key to the relative importance of all the country's manifold industrial enterprises. The values are established by surveys as to national needs and, once established, the list is maintained by a system of priority in determining the use of the six basic elements of industry which are:

1. Material
2. Facilities
3. Fuel
4. Transportation
5. Labor
6. Capital

The priorities board has representatives of each of these elements in its membership, except capital, and a working arrangement as to that exists between the war industries board and the war finance board.

Another point of widest interest lies in the fact that in the preference list is to be found an indication of what constitutes war work. The war department ruling in "war work or fight" is met by men, otherwise exempted who are engaged in any of the classes of essential industries listed. The new table may be expected within a week.

An official of the war industries board last week said machinery is being set up for the consideration of essential and nonessential industries and plants. He declined to discuss details but intimated the various governmental grasps upon industries, particularly with reference to essentials, would be co-ordinated. Immediately following his statement the board's own declaration was made. Whether the two are identical or distinct has not been indicated, although it is evident both follow the same channel.

Through the various trade pledges, the fuel administration, the control over iron and steel products, the railroad administration, the war finance corporation and the capital issues committee, and other departments, including the priorities committee and the labor administration, the war industries board holds a firm grip on practically all industry. This grip, however, probably will be made stronger in the list soon to be announced or in the machinery to be set up. The entire project makes clear that the less essential industry is to be more easily recognized through sharper defining of essentials.

Southern Firm to Make Ferroalloy

The Chattanooga Electro-Metals Co., Chattanooga, Tenn., subsidiary to the Southern Ferro-Alloys Co., recently capitalized at $200,000, has filed an application for a charter and will begin operations immediately. The plant is located at Chestnut and Twenty-first streets, and consists of a main building of steel frame, iron roof and sides, and includes a fireproof transformer room. The company will manufacture electrically ferrosilicon in grades from 10 to 16 per cent. The company had planned to manufacture ferrochrome, but at the request of the war industries board, ferrosilicon will be made instead. About 15 to 18 tons of ferrosilicon will be produced every 24 hours. Officers of the company are: Paul J. Kruesi, president; N. Thayer Montague, vice president; G. L. Davidson, manager; Arthur Raymo, general superintendent, and R. L. Patterson, chemist.

War Directors

Named By Secretary Baker In Munitions and In Aviation

Washington, Aug. 28.—Secretary Baker has appointed his first assistant, Benedict C. Crowell, of Cleveland, as director of munitions, and has appointed John D. Ryan, chief of the bureau of military aeronautics, as director of air service.

Mr. Ryan becomes second assistant secretary of war, in full charge of aircraft production, succeeding Edwin R. Stettinius, who will remain in Europe on special work. Mr. Crowell will take over that portion of Mr. Stettinius' work here which does not relate to aircraft production.

A new department to be known as the facilities division of the war industries board, the function of which will be to accelerate and assist in the conversion of plants to war work, has been organized by the board, with Samuel P. Bush, president of the Buckeye Steel Castings Co., Columbus, O., as chief. The immediate task of the new division will be to learn just what establishments can be converted to war purposes.

A number of changes in the personnel of various war branches at Washington are also announced. Major C. C. Williams, chief of ordnance, has named five special assistants to supervise activities of the department. Colonel Guy E. Tripp, chief of production division, who was appointed as one of the assistants, has been put in charge of the administration and work of officers having supervision over production of material in their respective districts. Colonel C. C. Jamieson succeeds Colonel Tripp as chief of the production division. Other assistant named are: W. H. Marshall, in charge of all material excepting machine guns, rifles, pistols, and their ammunitions and accessories, and excepting also chemicals, propellants, and explosives. Lieutenant Colonel Bascom Little, in charge of machine guns, rifles, pistols, and their ammunitions and accessories. Lieutenant Colonel W. C. Spruance, in charge of chemicals, propellants, and explosives. Lieutenant Colonel Ralph Crews, in charge of matters pertaining to the interpretation of contracts, etc.

Auto Makers Agree

With Government to Cut Production to 25 Per Cent

Washington, Aug. 27.—Only approximately 25 per cent of the 1917 production of passenger automobiles will be manufactured during the last half of 1918. This is the definite agreement reached by auto makers and the war industries board following the government's order that by Jan. 1, 1919, all these plants be transformed to a 100 per cent war basis or take their chances in getting material. No decision has been reached as yet as to the production of passenger cars after Dec. 31, 1918, but indications are that practically none will be built and all plants will turn out nothing but war material.

A few days ago Bernard M. Baruch, chairman of the war industries board and representatives of its various divisions held a conference with representatives of the automobile industry. When assured by Chairman Baruch that the nation's war program, involving the use of iron, steel, coal and labor necessitated this step, Hugh Chalmers and Albert Reeves, who represented the automobile manufacturers, agreed readily to the proposed cut to 25 per cent production. In its turn, the war industries board assured the automobile makers that preference treatment will be extended to them in the matter of obtaining material which they require to piece out their stocks on hand. They thus will be able to complete the 25 per cent manufacturing program. Manufacturers are pledged to subscribe to the pledges required by the priorities division of the board.

Another condition of the agreement is that plants which discover they have a supply of steel in excess of the quantity required to even up stocks and complete cars now in process of manufacture, shall turn it over to other plants which are short, unless that material is urgently needed for war work.

Whiting Not Sold Out

Several years ago the Whiting Foundry Equipment Co., Harvey, Ill., purchased the plant of the Calumet Foundry Equipment Co. This property is located about 3 miles from its main works and for a few years has been operated as a foundry. Recently this foundry was sold to an outside concern and an erroneous report became circulated that the Whiting Foundry Equipment Co. had sold out. This is not the case since the company is operating under the same management as formerly, having sold only this one small plant.

What is a Priority?

What is an Allocation?

When Does an Allocation Become a Priority?

MUCH confusion and misunderstanding exist throughout the iron and steel and related industries regarding the principles and application of the government system of priority distribution which today dominates practically every business transaction. This condition arises from inability or failure to grasp and correlate the numerous rules and regulations issued from time to time by the priorities division of the war industries board.

THE IRON TRADE REVIEW has undertaken to set forth in simple, non-legal language the underlying purposes, the definite application and the practical workings of the system as they concern the average producer or consumer of iron and steel. This will be done by a series of articles written by the editor of THE IRON TRADE REVIEW who has given intensive personal study to the question, including much time spent in Washington consulting with and interviewing those government officials who either have devised or now are administering the priority plan of war distribution.

The first article on priority—What It Is—What It Does, will appear in the Sept. 5 issue of THE IRON TRADE REVIEW. The other installments will appear consecutively in the succeeding issues.

Costs and Output

Occupy Attention of Producers At General Meeting At New York

New York, Aug. 28.—Pig iron costs and general production problems are among the important subjects being considered by the general committtee of iron and steel producers at the Waldorf-Astoria in this city today. Chairman E. H. Gary of the general committee of the American Iron and Steel institute is presiding. Discussion is being given to those factors concerned with iron and steel production with a view toward eliminating retarding influences and toward establishing output on a 100 per cent basis. Two of the vital factors concerned, transportation and labor, are being dealt with extensively.

The proposed concession of $5 per ton to the implement manufacturers among other matters may come up for discussion. Much importance is attached by various iron and steelmakers to the final decision that may be made with regard to the proposed allowance. Some belief is expressed that if this concession prevails it may become the opening wedge toward a general shaking down of prices.

Large tonnage sof foundry pig iron for first half of 1919 delivery are being sold in this district by a leading Buffalo maker.

No Advance in Scrap

That advances in scrap iron and steel prices are impending is authoritatively denied by W. Vernon Phillips, chairman of the subcommittee on scrap iron and steel, in the following language:

"Rumors to the effect that an advance in the prices of iron and steel scrap is probable are unqualifiedly denied. There is no thought or expectation of any change in scrap iron and steel prices."

Charcoal Makers Help

Representatives from a number of charcoal iron producers met recently in Cleveland to formulate a working organization to aid the pig iron committee of the American Iron and Steel institute in the allocation of charcoal iron. Among those who attended the meeting and are memberse of the permanent organization were W. G. Mather, Cleveland-Cliffs Iron Co.; W. L. Saunders and J. C. Ford, Mitchell-Diggens Iron Co.; A. Cameron, East Jordan Furnace Co.; G. C. Craver, Stephenson Charcoal Iron Co.; William Gearhauser and J. C. Holt, Superior Charcoal Iron Co., and F. W. Hutchings, Charcoal Iron Co. of America.

William Gearhauser and F. W. Hutchings have been chosen as a special committtee of two to confer with Jay C. McLachlin of the pig iron adminstration at Washington on the distribution of output so that customers engaged in war work will receive the required supplies of charcoal iron. It is the intention of this committee to assist in making allocation for essential purposes, and to report in turn to the permanent organization, of which W. G. Mather is chairman.

Operations Satisfactory

New York, Aug. 28.—Following the regular meeting of the financial committee, Judge Gary announced that current mill production of the Steel corporation is satisfactory in view of present conditions. Ingot output is proceeding at 95 per cent of capacity, which is slightly less than a month ago, but is equal to the best of normal years. The blast furnaces are operating at 92 per cent of capacity.

Wage Increase Announced

At its employes' second annual picnic, the Shepard Electric Crane & Hoist Co., Montour Falls, N. Y., announced that effective Sept. 2 all wages would be increased approximately 20 per cent. The picnic was held Aug. 24, at Havana Glen, near Montour Falls, and was attended by 2000 people including the company's 700 employes. An interesting program of athletic events was arranged and all prizes consisted of thrift stamps.

Washington dispatch says Joseph E. Davies, of Wisconsin, will head American mission to Russia.

The Non-Ferrous Metals

Copper Lead Spelter Tin

	*Copper	†Spot Straits, tin	‡Lead, New York basis	Spelter St. Louis basis	§Aluminum	Spot antimony
Aug. 21	26.00	.....	8.05	9.00	33.00	14.25
Aug. 22	26.00	.....	8.05	9.12½	33.00	14.37½
Aug. 23	26.00	.....	8.05	9.25	33.00	14.37½
Aug. 26	26.00	.....	8.05	9.37½	33.00	14.37½
Aug. 27	26.00	.....	8.05	9.37½	33.00	14.37½

*Government fixed maximum price for prime lake, electrolytic and casting copper, in ingots, pigs, slabs, etc., less than carloads, 27.30c.
†No spot Straits tin offering.
‡Price agreed to by leading interest and independents.
§Government fixed price for 98 to 99 per cent ingot aluminum in 50-ton lots; lots 15 to 50 tons, 33.10c; one to 15 tons, 33.20c.

NEW YORK, Aug. 27.—The price fixing committee of the war industries board conferred last week with representatives of the aluminum, sheet and plate zinc and spelter industries. The decisions arrived at in these meetings, as later approved by President Wilson were as follows: Continuance of the 33c price for ingot aluminum, 98 to 99 per cent in 50-ton lots, with the prevailing extras for remelted and rolled products, also for smaller lots; continuance of the 12c price for grade A spelter; continuance of the 15c price for sheet zinc, with the usual extras and discounts; and 14c for zinc plates.

The lead producers committee for war service issued a statement last week, in which the present policy of producers relative to prices and distribution of lead was formally published. This policy fixes the price of lead at 8.05c, New York basis, and 7.75c, East St. Louis; no lead is distributed for resale excepting in less than carload lots; remelted or scrap lead must not sell higher than the market for new lead; dealers and manufacturers are urged to eliminate nonessential consumption of lead; and retail dealers' profits are limited to ½ cent a pound over the wholesale price.

The tin markets at London and Singapore have been declining steadily the past week. The close today was £368 for Straits, spot in London. The Singapore price c. i. f. London, is down to £365 10s. The New York market also has been dropping consistently, Straits tin being available for import by preferred consumers at 78c, as compared with nearly 90c a few weeks ago. Spot Lamb & Flagg has been offering in the past few days in New York at 83.50c; spot Banca at about the same level; and spot Chinese No. 1 at Chicago at the same price. No future shipment Banca or Chinese tin is offered, owing to the high price prevailing in the primary market as compared with the spot market.

The spelter market has been growing steadily stronger. A heavy buying movement by consumers took place last week and prices advanced to 9.37½c, East St. Louis basis, for prompt and September shipment. Producers are asking about 9.12½c for fourth quarter shipment.

Following the stronger tone which appeared in the antimony market a week ago, stimulated by the reported government buying, business quieted down and the market for spot Chinese and Japanese brands is steady at 14.37½c, duty paid.

Filtered Water For Industrial Use

Large Savings Are Effected by the Purification of Water Used For Steam Generation and Cooling Purposes—Interruptions of Operation Are Eliminated—Description of Carpenter Steel Co.'s System

BY HAROLD C. STEVENS

LOSSES running annually into many millions of dollars are incurred by the steel industry through the use of dirty water. Such losses occur particularly in the principal industrial districts, where water for steam generating purposes generally must be taken from highly turbid streams. Since unproductive expense involved in the use of large volumes of dirty water is an item not particularly visible at first glance, only a few steel companies so far have devoted attention to the possibilities of this subject. Such of them as have gone to the extent of taking remedial measures, have found that the problem may be solved readily by filtering all or a part of the water used. The art of water filtration has been so thoroughly developed that the cost of constructing and operating a filter plant, and the results attainable, can be determined closely in advance. Considering the expenses resulting from decreased life of boilers, clogged water passages in skids and elsewhere, wear of water cooled bearings, damage to material and interruption of operations, the annual saving which is effected by filtration ranges from about 20 to 40 per cent of the cost of installing a filter plant. Thus a filter plant pays for itself in two and one-half to four years. For large plants, naturally, the cost of construction is less in proportion to that of small plants. The cost of operating large filters also is smaller per million gallons of water filtered.

Economy of Water Purification

A typical industrial water filtration plant, whose operation is attended with entire success, is that installed more than two years ago at the works of the Carpenter Steel Co., Reading, Pa. Up until that time, this company obtained most of its water requirements from the Schuylkill river, and during the periods when the river was more turbid than usual, a large part of the water supply was taken from the city mains. The latter source of supply was found to be undesirable, through an investigation which showed that the average cost of water was greater than if a filter plant were installed with capacity to provide all the clean water needed. The anticipated benefits have been realized fully since the filter plant was completed, as the actual water cost has been cut down, and the difficulties attending the use of dirty water have been eliminated. For instance under the former methods, there were interruptions of rolling mill operation due to clogged cooling water passages By the elimination of these interruptions, a saving of more than $5000 annually has resulted. The life of water-cooled mill bearings has been prolonged at least 10 per cent by the elimination of grit, and the cost and upkeep of sanitary appliances shows a marked decrease for the same reason. The use of city water for boiler feed and pickling purposes at times of high turbidity in the river has been rendered unnecessary, thus saving an additional considerable sum each year. The total annual saving is estimated to be over $8000. The cost of construction was approximately $30,000.

THE author of this article who designed the water filtration system at the plant of the Carpenter Steel Co., has been engaged for more than 20 years on matters pertaining to water supply and sewage disposal. He served on the engineering staffs of the metropolitan water board of Boston, the bureau of filtration of Philadelphia, and the board of water supply of New York. In 1908 he was in charge of the operation of the sterilization plant installed for the treatment of the water supply of Jersey City with hypochlorite of lime, this being the first instance of purification of municipal water supply by chlorination. During the past eight years he has been in consulting practice. One of his leading achievements was the designing and supervision of construction of the 30,000,000-gallon, rapid sand, filter plant at Trenton, N. J., which has attracted much attention among engineers and waterworks officials and in its four years of operation has been characterized by marked success. Mr. Stevens is a member of the American Society and the Boston Society of Civil Engineers, and other societies.

Output Of Plant

The filter plant shown in Figs. 1 and 2 has a nominal capacity of 1,500,000 gallons per 24 hours. Its main components are a low-lift pump, tanks and measuring devices for the application of chemicals, a settling basin, a high-lift pump, filters, superstructure, and a water tower, all of which are contained in an area of 2600 square feet. Water is taken from the river through a screen by the low-lift pump and delivered into the settling basin, receiving on its way a measured quantity of alum which by combination with the alkaline constituents in the untreated river water, forms a flocculent precipitate of aluminum hydrate. This precipitate, or coagulum, as it is known in filter parlance, settles readily and entrains and carries down a considerable part of the suspended matter in the water, thus reducing the amount of work to be done by the filters. After passing the settling basin, the water goes over a skimming weir and flows to the high-lift pump which delivers it through the filters to the distribution system and water tower. The low-lift pump is a motor-driven, vertical, centrifugal unit, and delivers 1800 gallons of water per minute. The high-lift pump

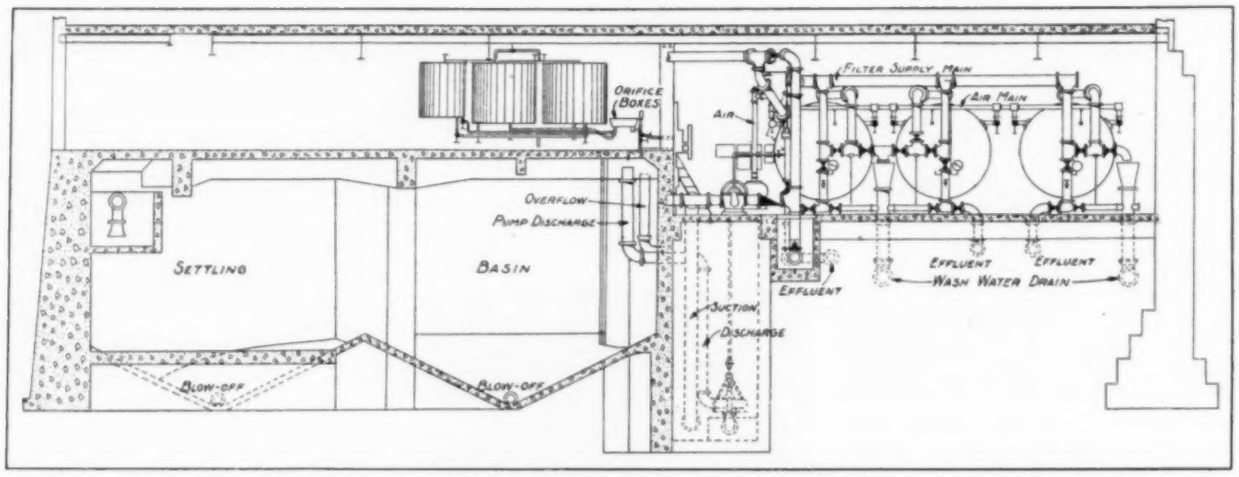


FIG. 1—SECTIONAL DRAWING OF THE CARPENTER STEEL CO.'S FILTRATION PLANT, SHOWING DRAIN PIPES, SUPPLY MAIN, ETC.

likewise motor-driven, is a horizontal unit of a corresponding capacity. Both are started and stopped automatically by devices actuated by the water levels in the basin and water tower, so that these levels are maintained within set limits.

The chemical equipment consists of two pairs of solution tanks, one for alum and the other for soda ash. The soda ash is employed to increase the alkalinity of the river water at times when it otherwise is too low to effect thorough decomposition of the alum. Each solution tank is provided with a constant level tank, having an adjustable orifice. The setting of the orifice effects the delivery of the desired quantity of chemical solution and an electrically operated valve on the outlets of the orifice tanks automatically starts and stops the flow of solution to correspond with the operation of the low-lift pump.

The settling basin is a concrete structure with a capacity of about one hour's flow, which is sufficient to permit the deposition of the heavier suspended particles and part of the coagulum, the latter carrying down much of the finer suspended matter. The bottom of the basin is built in two hopper-shaped sections, with a blow-off pipe at each apex to permit the discharge of the accumulated sediment at intervals without draining the basin. The basin is covered and the floor thus provided carries the chemical equipment and affords

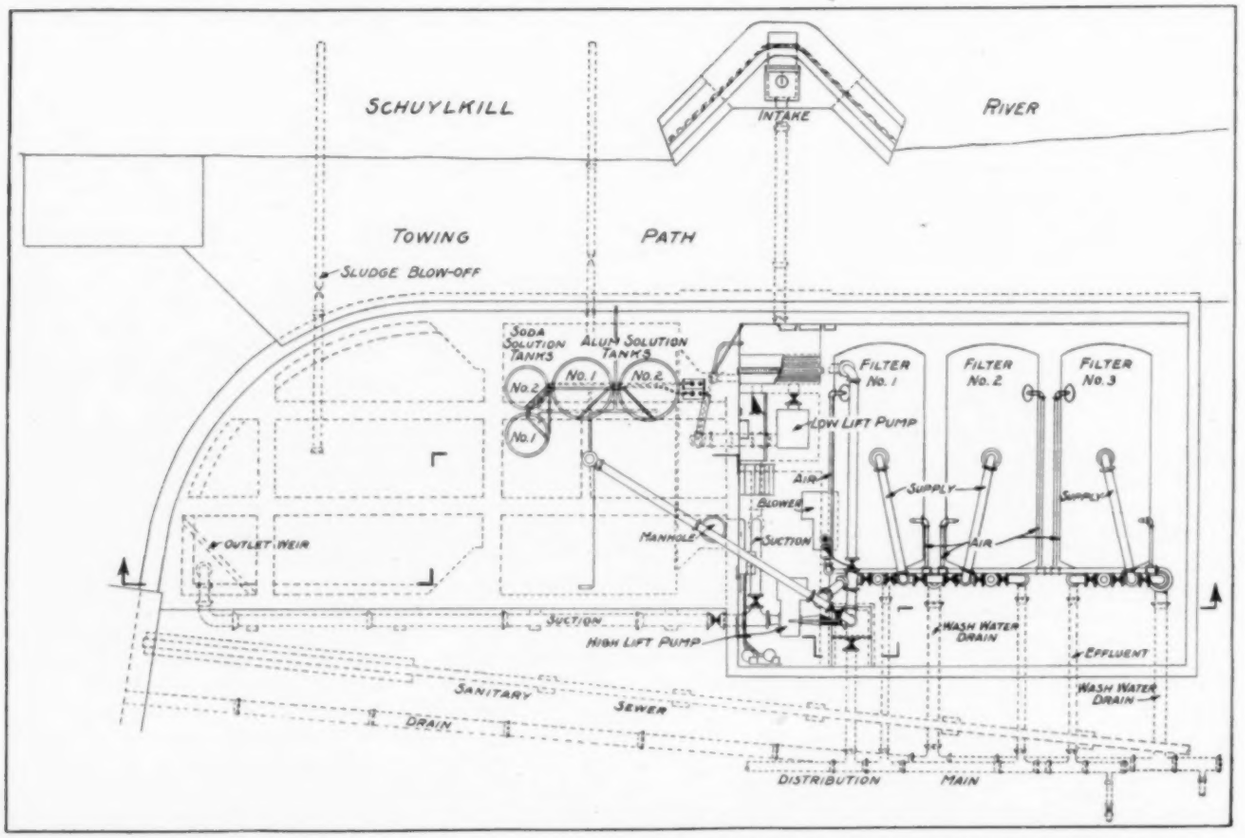


FIG. 2—PLAN VIEW SHOWING POSITION OF FILTERS, PUMPS, BLOWER, ALUM AND SODA SOLUTION TANKS, INTAKE, ETC.

plenty of storage space for chemicals.

The filters consist of three units of the pressure type with a combined nominal capacity of 1,500,000 gallons per 24 hours. Since perfect clarification is not essential and the water is not used for drinking, the filters are operated at a considerably higher rate. Each unit is a cylindrical tank, 8 feet in diameter and 20 feet long. The tanks are set horizontally, and contain a bed of filter sand 30 inches deep. The sand is supported on a layer of graded gravel, overlying a strainer system.

In filtering, water is admitted at the top through a manifold pipe. It passes downward through the sand, which intercepts the coagulum and fine suspended matter not deposited in the settling basin, and then is collected by the strainer system and delivered to the mains. It is essential that some coagulum shall pass to the filter, as this substance is readily held by the sand and in turn holds the fine particles of silt or coal dirt that sand alone could only partially retain. Strainers are spaced about 6 inches apart. They are screwed into a series of 1½-inch parallel pipes, also spaced 6 inches apart, which lead to a collecting header pipe. The latter conducts the water from the filters. The pipes are embedded in concrete so that only the strainer heads project above it. The strainer system serves two essential functions; first, by drawing the water from all parts of the bottom it assures a uniform rate of filtration throughout the sand bed, and second, when the filter is being washed it delivers quantities of water beneath all parts of the bed so that all of the sand receives a proper degree of cleaning. The latter function is the more important and its effective accomplishment depends largely upon correct design.

FIG. 3—WATER TOWER IS SUPPORTED ON SETTLING BASIN WALLS

After a period of operation, when the quantity of solid matter intercepted by the sand becomes so great as to interfere with the passage of a sufficient quantity of water, it is necessary to clean the sand by washing. Each filter, successively, is put out of service by operating certain valves, and filtered water is admitted in reverse direction to filtering and at a much higher rate. This water, passing upward through the bed, lifts the sand a few inches, separates the grains and detaches the mud which accumulates in the interstices between the grains and on top of the bed. The dirty water then passes from the top of the filter and is wasted through a drain. A few minutes suffice for the washing of a filter unit.

In addition to the use of water in washing, air is first blown upward through the bed for two or three minutes. The air perforates the bed in all parts and so assures an easy and well distributed initial passage of the wash water. The principal effect of the air wash is to prevent permanent clogging of the sand, which otherwise might start at the corners and sides of the bed and gradually spread until the effective filtering area would be seriously reduced. A motor-driven, heat-operated, positive blower is used in air washing. One attendant operates the filters. A small amount of routine laboratory work is required daily for controlling the chemical treatment of the water. The building in which the filter plant is housed is shown in Fig. 3. The first story only is occupied by the filters, the second

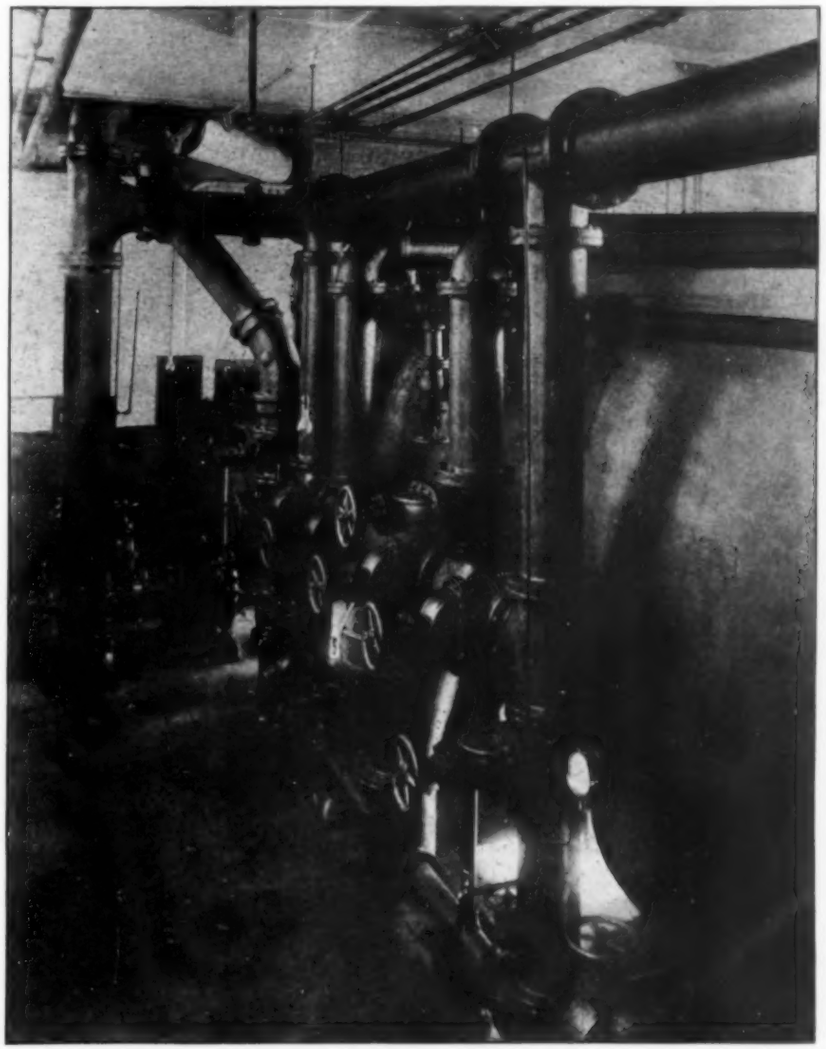


FIG. 4—FRONT ENDS OF TWO FILTERS, ARRANGEMENT OF PIPES AND VALVES AND HIGH-LIFT PUMP

and third stories being used as a mill laboratory and transformer room, respectively. The location of the water tower is unique, it being supported on the settling basin walls with columns passing up through the building, thus economizing ground space. This illustration shows that the value of ground occupied by the filter plant is not entirely chargeable to it. In a large plant much of the ground level area required for the settling basin would be available for other purposes. Fig. 4 is an interior view showing the front ends of two filters, the arrangement of piping and valves, and the high lift pump. Figs. 1 and 2 show the details of the system.

New Grenades and Their Uses Described

THE development and manufacture of grenades in the United States has reached a stage of great importance, recent progress showing that American manufacturers are capable of producing on short notice practically any number that may be required. The announcement by the ordnance department that hand grenades are now being manufactured at the rate of 2,000,000 a month and rifle grenades at the rate of 1,000,000 a month developed the fact that 18,000 persons are now employed in their production in the United States and that this number will soon be augmented by reason of the fact that production will be doubled within a few months, orders having been placed for 60,000,000 rifle and hand grenades.

The design of the various types of grenades has reached a high stage of perfection, considering the fact that in the early days of the war the soldiers on the French front were throwing at each other tin cans, laden with explosives, to which were attached the crudest forms of fuses. One of the most modern types now manufactured in the United States was designed by two Frenchmen. Grenades which lay smoke screens and spread suffocating gases indicate the inventive ingenuity resulting from the situations on the battlefronts.

Based on the method of firing there are two general classes of grenades, hand and rifle. The hand grenade may be of the defensive, the offensive or of the chemical type, of which latter there are two classes, phosphorus and gas. The defensive grenade is the most powerful and the one generally used when tactical conditions permit, being thrown from cover at an advancing foe. It is about the same size and shape as a large lemon with a body or shell of gray cast iron scored with deep grooves longitudinally and transversely to insure proper fragmentation when it explodes.

In addition to the body, the main parts of the grenade are the *bouchon* assembly, detonator and explosive mixture. The *bouchon* is a die-casting, composed of a tube which is screwed into the end of the grenade body, and a projecting head. The tube holds a standard fuse and detonator which are inserted into the lower end so as to bring the primed end of the fuse flush with the upper end of the tube. The projecting head consists of a cylindrical seat with four small lugs on the inside which hold the priming cap in place over the primed end of the fuse, and a casing which contains the firing spring and the striker. These last are hinged on a pin inserted through two holes cast in the sides of the casing and are so placed that the spring when released will drive the striker against the primer.

The spring and striker are kept cocked by an operating lever which hooks over the side of the casing opposite that through which the hinge-pin is inserted. This lever caps the casing and extends down along the outside of the grenade body. It is held in place by a safety pin with a ring attached to it which passes through the sides of the casing. The small opening underneath the operating lever is closed by a sheet metal sealer.

Fuse Timed for Five Seconds

The grenade is safe till the operating lever is released. Even after the safety pin is removed the grenade cannot function as long as the lever is held against the body of the grenade by the hand of the thrower. In other words, the firing spring cannot operate until the grenade is thrown. The normal time for the burning of the fuse, that is the time which elapses between the throwing of the grenade and its explosion, is five seconds.

When a soldier is ready to throw the grenade he grasps it firmly in his right hand, removes the safety pin, holding the lever against the grenade body, assumes a position similar to an athlete "putting the shot" and throws at the objective with a straight-arm, overhand throw. When the grenade leaves the hand, the lever flies up and the striker spring is released, driving the striker against the primer which ignites the fuse. At the end of the five-second period the grenade explodes, providing some 300 fragments, effective at from 60 to 70 feet.

The offensive grenade differs from the defensive in that it depends entirely upon its explosive effect for its usefulness against the enemy and is generally used at shorter range, in offensive tactics, and when the grenadier is not necessarily under cover. The body is composed of a cylinder of waterproofed cartridge paper, with a conical die-cast top, threaded to receive a *bouchon* and operating lever precisely like those of the defensive grenade. The fuse and detonator and method of operation are exactly similar to the other type.

The phosphorus grenade has a barrel shaped container of drawn sheet steel, about 3½ inches long and 2¼ inches in diameter. To one end of this body is welded a steel collar or bushing threaded on the inside. Into this collar is screwed a steel thimble which runs down into the center of the inside of the body of the grenade. This thimble is designed to prevent the phosphorus charge from coming into contact with the detonator and fuse. These last, together with the standard *bouchon* assembly of which they form a part, are screwed into the top of the thimble, which is threaded on the inside for this purpose. The grenade is painted gray when loaded, or "live".

The phosphorus grenade gives a shower of burning fragments of phosphorus as well as a cloud of dense white smoke which can be used to repel an advancing attack, or if thrown during an advance would make a screen to conceal the advance and repel enemies who might be in the open.

The gas grenade is in construction similar to the phosphorus grenade save for two annular corrugations about a quarter of an inch apart near the bottom to serve as a distinguishing mark. It produces a low-lying cloud of dense white gas of an intensely irritating nature which may be classed as suffocating gas. It is used largely in "mopping-up" the trench, cleaning out dug-outs by forcing the enemy into the open or forcing him to wear a gas mask during the advance.

Rifle grenades are used to fill in the gap between the hand grenade and the light trench mortar. The type used by our army was designed by two Frenchmen, Vivens and Bessieres, and is called the V. B. rifle grenade. It is about 2½ inches long, 2 inches in diameter and is fired from the dis-

charger which fits over and is attached to the muzzle of the rifle in the same manner as a bayonet.

The body of the grenade is a cylindrical iron casting with a rounded top and a flat base, smooth on the outside and fitting closely into the discharger, but scored with deep grooves on the inside to insure proper fragmentation. It is pierced longitudinally by a central tube through which the bullet from the rifle cartridge passes.

The firing mechanism comprises a brass fuse container and a detonator tube, the former fitting into the end of the latter. These are inserted, respectively, into holes precisely opposite one another in the top and base of the grenade body and so placed that the axis of both runs parallel to and about half an inch distant from that of the central tube. The head of the fuse-container projects beyond the rounded top of the grenade body and its inner face is fitted with a primer beyond which a striker projects obliquely over the end of the central bullet tube. When the bullet from the rifle cartridge has passed through the central tube it hits this striker and thus fires the primer. From the primer the flash is transmitted to the fuse, which runs longitudinally through the center of the fuse container into the interior of the grenade, and is timed to burn eight seconds. The fuse in turn fires the detonator which burst the walls of the detonator tube and fires the main charge, thus exploding the body of the grenade.

The grenade is thrown from the discharger by the gases behind the bullet from the rifle cartridge, which save insofar as they follow the bullet through the central tube, exert their pressure on the flat base of the grenade. The normal range when the rifle is aimed at 45 degrees is about 200 yards.

Assistance Rendered by French Railroads

When on Aug. 2, 1914, the European war started, and the Hun began his "victorious" march to Paris, the railroads of France were called upon to perform about the largest task which any one industry has or will be called upon to do. It was up to the railroads to stem the tide of German soldiers which was sweeping down from the north. And the roads performed their work credibly.

A law passed in 1888 brought the railroads under the control of the government during a time of war, and so it was that when the war broke out, every employe, from the head of the company to the porter was mobilized and ready at his post. A special commission was appointed, consisting of two members, an officer and an influential representative of the board of directors of the Etat railway, in whose hands the control of French railroads is vested during times of peace. These two men, who are known as the military commissioner and the technical commissioner, undertook collectively the general management of each road.

In an irreproachable manner the railroads have carried out the tasks assigned them. The transporting of troops and war materials to the points of concentration, was affected within two weeks on the Est railway, by 4000 trains. Now despite the fact that parts of the line have been occupied by the enemy and other parts destroyed, it is still open and being used for transport purposes, etc. All

A 3-TRAY, ALL-STEEL WORK STAND

the material hastily sent from Belgium as the first of the Hun hordes swept southward, was saved by the Nord Railway line, which material included 2700 Belgian engines, which were brought back while the French army heroically tried to stay the Hun invasion. Many trains were held until the last minute within a short distance of the battle line, so that hundreds of large guns could be saved. During 1915 on the Nord railway alone, as many as 114,000 military trains were run. This road which formerly was 3840 kilometers has now been reduced to 1976. During the period between Aug. 5 and Aug. 26, 1914, the Etat railway working in conjunction with the Nord line, ensured the transfer of troops from the west of France to the battle line. During that period 17,000 trainloads of troops, 250 seige artillery and ammunition were transported.

When the battle-front was being extended toward the North sea, 700,000 men were transferred in more than 6000 trains over 228 kilometers of track. Since the outbreak of the war the role of the railroads has gradually changed, according to the kind of operations in hand. They now, instead of simply carry to the battle line in France, carry to the British and Belgian troops in the north, to the Italians in Italy, and the armies in Saloniki. They bring back wounded, civilian refugees and prisoners. One of the greatest tasks which the roads have on their hands, is the ensuring of the postal service, which comprises millions of letters and parcels for all the allied armies.

The good work of the railroads ever since the start of the war but recently evoked an acknowledge from the French government. Many road officials have been rewarded for distinguished service. After the Huns were checked in their March, 1918 drive, Premier Clemenceau said:

"After having displayed from the very beginning of the war the most splendid endurance and assistance, the personnel of the railroads gave during the recent military operations fresh proofs of a spirit of self-sacrifice and an admirable devotion to their country."

Rigidly Built Work Stand

The all-steel work stand shown in the accompanying illustration has been placed on the market by the Meilink Mfg. Co., Toledo, O. It is 32 inches high and is provided with three 16 x 26-inch trays. The legs are made of single steel angles. The trays are strengthened by a 2-inch flange along all sides and the back is supplemented by a formed hem. The forward edges of the trays are turned down so as to afford easy access. The trays are bolted to the stand proper by means of welded gussets.

Details are now being completed in connection with the recent incorporation of the Hicks Fire Clay Products Co., Springfield, Ill., which according to an announcement will develop 150 acres of fire clay at Drake, Ill. According to present plans a plant will be built in Springfield immediately. The company at first will manufacture fire bricks, but later will make other clay products. The plant at Springfield will have a capacity of 50,000 bricks a day. The officers of the company are W. C. Holmes, president; C. T. Hicks, vice president; E. C. Pearce, secretary, and J. C. McGrath, treasurer. The present office of the company is room 2, I. O. O. F. Temple, Springfield, Ill.

Carbocoal Fuel Process Perfected

New Product Result of Two Distillations, First of Raw Coal, Then of Briquets—Relatively Soft But Tough Form of Carbon Suitable For Burning Under Boilers

BY CHARLES T. MALCOMSON

AN elaborate series of experiments has been conducted the past three years at Irvington, N. J., which has resulted in the perfection of a process for the manufacture of smokeless fuel from high-volatile coals and for the recovery and refinement of the coal tar products derived therefrom. These experiments have been financed by Blair & Co., New York, and were conducted under the direction of Charles H. Smith, the inventor of the process.

The low-temperature distillation of coal has interested investigators for many years. Sporadic attempts have been made to solve the mechanical problems but until the Smith process was developed they were not carried to conclusions of economic value. The present coal shortage and the increasing demand for smokeless fuels make this subject one of timely interest.

The following equipment was installed and operated during the experimental period: Four horizontal and two vertical units of commercial size for the low-temperature distillation of the coal; two vertical, two horizontal, and two inclined benches for distillation of the briquets at medium and higher temperatures; presses and auxiliary equipment necessary for making briquets and a complete by-product recovery and tar refining plant.

There is, in addition to the commercial equipment, a complete chemical laboratory with distillation and recovery apparatus, including facilities for refining and cracking the tar and measuring the yields and calorific value of the gas. This apparatus makes possible a study on a small scale of the various problems involved in the process.

Description of Process

Mr. Smith's experiments have resulted in the production on a commercial scale of a fuel called carbocoal, which for convenience in handling is prepared in briquet form; a yield of tar more than double that obtained in the ordinary by-product coking process; ammonium sulphate in excess of that normally recovered in the ordinary by-product coking process and gas in amount approximately 9000 cubic feet per ton of coal carbonized, which is at present used in the process.

The essential features of the Smith process are the two distillations carried on at different temperatures, first of the raw coal and second of the raw briquets. The raw coal after being crushed is distilled at a relatively low temperature, 850 to 900 degrees Fahr., and the volatile contents are reduced to the desired point. The result of this first distillation is a large yield of gas and tar and a product rich in carbon, termed semicarbocoal. The semicarbocoal is next mixed with a certain proportion of pitch obtained from the tar produced in the process and this mixture is briquetted. The briquets are then subjected to an additional distillation at a higher temperature, approximately 1800 degrees Fahr., resulting in the production of carbocoal, the recovery of additional tar and gas and a substantial yield of ammonium sulphate.

Table I

Analysis of Carbocoal

	From run of mine, per cent	From washed coal, per cent
Moisture	1.00 to 3.00	1.00 to 3.00
Volatile matter...	0.75 to 3.50	0.75 to 3.50
Fixed carbon ...	82.00 to 88.00	85.00 to 90.00
Ash	8.50 to 12.00	7.00 to 10.00
Sulphur	0.5 to 1.50	0.6 to 1.50

The characteristic feature of the primary distillation is that it is continuous and that the coal is constantly agitated and mixed during the operation. This is accomplished by a twin set of paddles which also advance the charge through the retort. By this means all portions of the charge are uniformly distilled, and by controlling the speed at which the charge moves through the retort the distillation may be arrested at any desired stage. As only a partial carbonization is permitted in the primary distillation the hard metallic cells characteristic of coke are avoided. The period of distillation is one to 2 hours, and the continuous retort has a carbonizing capacity of one ton of coal per hour.

In the subsequent distillation of the briquets all evidence of the pitch as a separate ingredient disappears. There is a marked shrinkage in the volume of the briquet with a corresponding increase in density, but no distortion of its shape. This distillation requires four to five hours, and is performed in an inclined, self-charging and self-discharging bench.

The carbocoal represents more than 72 per cent of the weight of the raw coal, the exact percentage depending upon the volatile content of the latter.

Carbocoal Clean, Dustless

Carbocoal is dense, dustless, clean, uniform in size and quality, and can be readily handled and transported long distances without disintegration. It is grayish black, slightly resembling coke, but its density more nearly approaches that of anthracite. It is manufactured in briquet form and can be made in any size from one-half ounce to five ounces. The larger sizes are better suited to locomotive purposes and the smaller sizes for domestic use.

Heretefore, devolatilized fuels such as coke have not attained the high rates of combustion desired for locomotive, marine and general steam purposes, and their greater displacement has operated against their general use where transportation cost or stowage space has been an important factor. Carbocoal overcomes these objections. It is actually a relatively soft but tough form of carbon, readily attacked by oxygen in combustion, and for this reason requires much less draft than other high-carbon fuel.

Carbocoal has been tested by the Long Island railroad, Pennsylvania railroad, Carolina, Clinchfield & Ohio railroad and by the United States navy. These tests have demonstrated that the fuel is smokeless, that it will evaporate from 8.5 pounds of water at a combustion rate of 100 pounds per square foot of grate surface per hour to 12.8 pounds of water at a combustion rate of 27 pounds per square foot of grate surface per hour,

From a paper to be presented at the Colorado meeting of the American Institute of Mining Engineers, September, 1918. The author, Charles T. Malcomson, is president, Malcomson Briquette Engineering Co., Chicago.

from and at 212 degrees Fahr. per pound of fuel fired. It requires no greater draft than bituminous coal. A maximum combustion rate of 166 pounds per square foot of grate surface per hour has been reached for a short period.

Carbocoal has been found particularly suitable for the following purposes: Marine and locomotive service, where limited grate area and restricted boiler capacity demand efficient fuel, where smoke is objectionable or dangerous, as in the case of ships in time of war; stationary boilers, where smoke pollution of the air is offensive and dangerous to health; domestic uses, including furnaces, stoves, ranges and open grates, where cleanliness is a desirable factor; kilns, drying and roasting ovens, and all purposes where an intense and uniform heat is desired; in metallurgical furnaces, as a substitute for coke and in gas producers.

Carbocoal is compressed into briquet form to obtain a maximum density, to minimize transportation costs and the losses incident to handling and to secure the efficiency of combustion resulting from uniformity of size.

Briquets of bitiuminous and anthracite coals have been manufactured for many years. Such briquets are made from the smaller sizes or screenings of coal with the addition of a binder, such as coal tar pitch. In carbocoal, however, an entirely new product is obtained, differing from the original coal in chemical and physical properties. The briquets contain no binding material to soften or disintegrate in the fire. Carbocoal must be recognized not as a mixture but as a new product, the result of a process of manufacture.

The amount of ash and sulphur in the carbocoal depends upon the characteristics of the coal from which it is made. The summarized proximate analyses of carbocoal manufactured from 25 different coals at the Irvington plant are shown in Table I.

The percentage of by-products recovered from clean coal is greater than that recovered from high-ash coals; therefore the careful preparation of the raw coal by washing or other means is profitable.

Tar and Its Products

The total yield of tar by the carbocoal process is large. Coal containing 35 per cent volatile combustible elements produces more than 30 gallons of water-free tar per short ton. The tar products recovered from the distillation of the coal at the low temperature used in this process are different in nature from those obtained in other processes where high temperatures are used. At the lower temperature there is an abundance of tar vapors and a relatively small yield of gas of high illuminating value. At the higher temperature these primary products are split up with consequent increase in the gas yield and a corresponding decrease in its illuminating value and in the amount of tar vapors recovered. There is also an increase in the percentage of residuals, the pitch increasing from 30 per cent in the low-temperature distillation to 64 per cent or more when high temperatures are used.

The tar obtained in the primary distillation of the coal has a specific gravity of 1.00 to 1.06. It contains a large percentage of light solvent oils, tar acids and cresols, but very little carbolic acid and no naphthalene or anthracene. The free-carbon content of this tar is low. The light oils contain appreciable quantities of naphthalene, pentane, hexane, hexahydobenzenes and also hydrocarbons of the paraffine series, which make these oils valuable as a substitute for gasoline.

A satisfactory method of removing the paraffine and aromatic portions of the light oil has been developed, so that chemically pure benzol and toluol can now be obtained by this process. During the low-temperature distillation period 20 to 28 gallons of tar, including the light oil obtained from the stripping of the gas, are recovered. The exact amount depends upon the volatile content of the coal. This low-temperature tar contains approximately 30 per cent of pitch and 70 per cent of tar oils as compared with 50 to 60 per cent of pitch and 40 to 50 per cent of oil products contained in ordinary gas-house and coke-oven tar.

In the second or high-temperature distillation, five to six gallons of tar are added to the yield. This tar is heavier than that obtained from the first distillation and is similar to coke-oven tar.

Table II compares the tars and light oils obtained in the production of carbocoal with those obtained in the ordinary by-product coking processes.

Pitch is always an element of questionable value in tar distillation. The Smith process, however, utilizes all of its pitch for briquetting the semi-carbocoal produced by the first distillation. Moreover, the valuable portions of this pitch are recovered in the tar and gas resulting from the second distillation. It is therefore noteworthy that all the tar products recovered by this process are oil derivatives.

The primary distillation of the raw coal gives only a small yield of ammonium sulphate. The secondary distillation of the raw briquets brings the amount up to approximately 21 pounds per short ton of raw coal carbonized.

In the primary distillation of the raw coal from 5000 to 6000 cubic feet of gas per short ton of coal is recovered. This has a heating value of 650 to 700 B. t. u. per cubic foot. The distillation of the briquets yields also about 4000 cubic feet of gas of 350 to 400 B. t. u. per cubic foot. The process in its present stage of development uses all of the gas recovered from both distillations.

High-Grade Abrasives

Tremendous expansion in manufacturing in 1917, particularly in the steel and metal industries, is reflected by the increased production of high-grade abrasive materials in the United States. A preliminary compilation by Frank J. Katz, United States geological survey, department of the interior, of reports on the production of emery, corundum, and artificial abrasives in 1917 indicates a total of 72,276 short tons, valued at $8,325,312, which is an increase of 33 per cent in quantity and 172 per cent in value as compared with 1916.

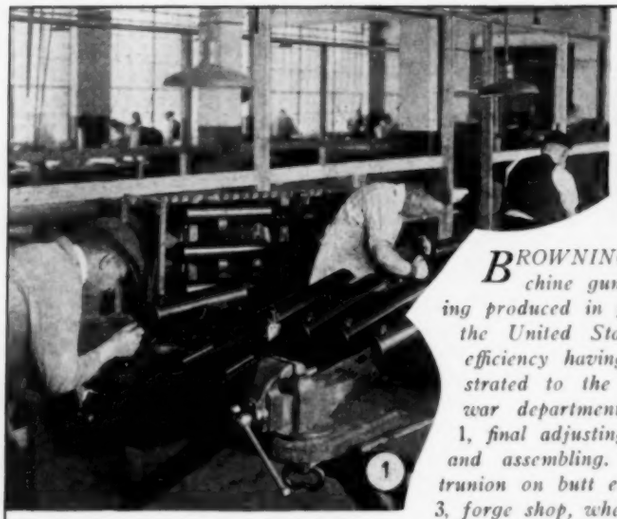
The production of emery from the Peekskill district, New York, amounted to 14,842 short tons, very little less than in 1916; the production of corundum in North Carolina was 820 short tons, a large increase over 1916.

Table II

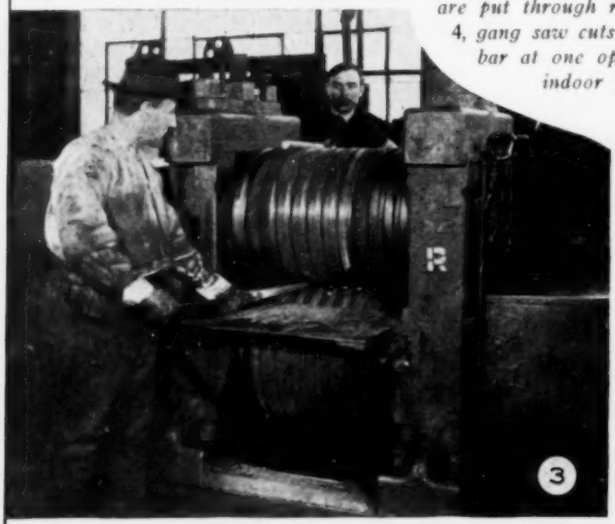
Recovery of Liquid Products Per Ton of Raw Material

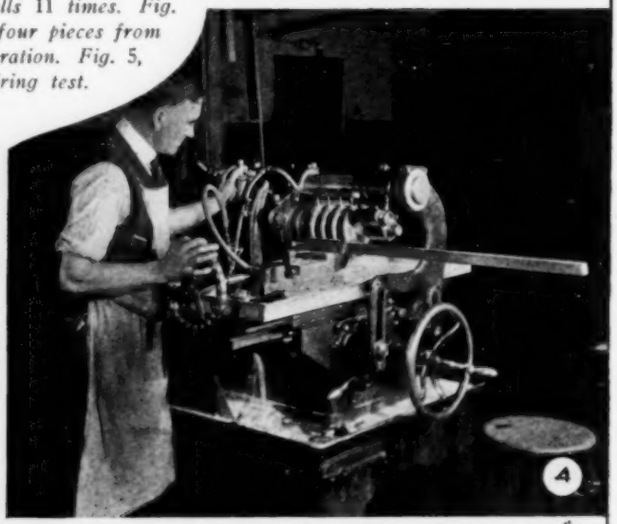
	Distillation temperature degrees, Fahr.	Byproduct coke oven		Carbocoal, first distillation		Carbocoal, second distillation	
		Gal.	Per cent	Gal.	Per cent	Gal.	Per cent
Light oil	0–170	0.27	3.47	1.58	6.60	0.003	0.05
Middle oil	170–230	0.44	5.85	3.29	13.70	0.036	0.60
Creosote oil	230–270	0.78	10.37	3.11	12.95	0.126	2.10
Heavy oil	270–360	1.26	16.81	8.88	37.00	2.485	41.42
Pitch	.....	4.66	62.18	6.90	28.75	3.290	54.83
Loss	.....	0.09	1.32	0.24	1.00	0.060	1.00
Totals	.....	7.50	100.00	24.00	100.00	6.000	100.00

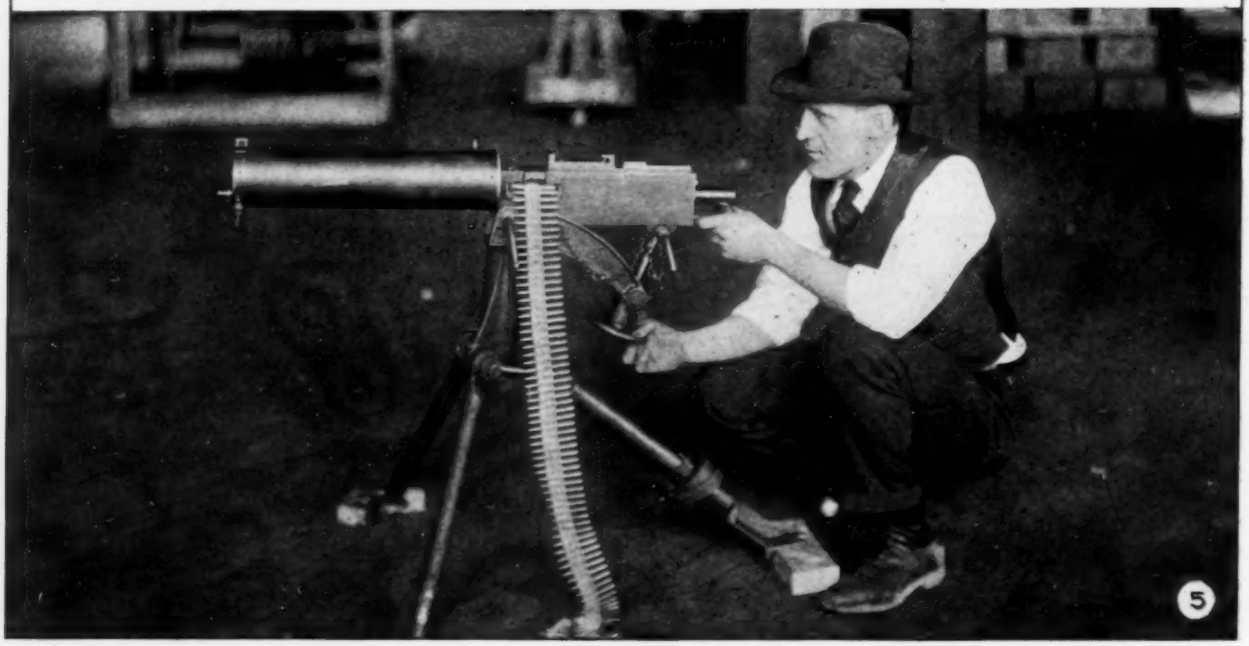
For Our Victorious Army---Making



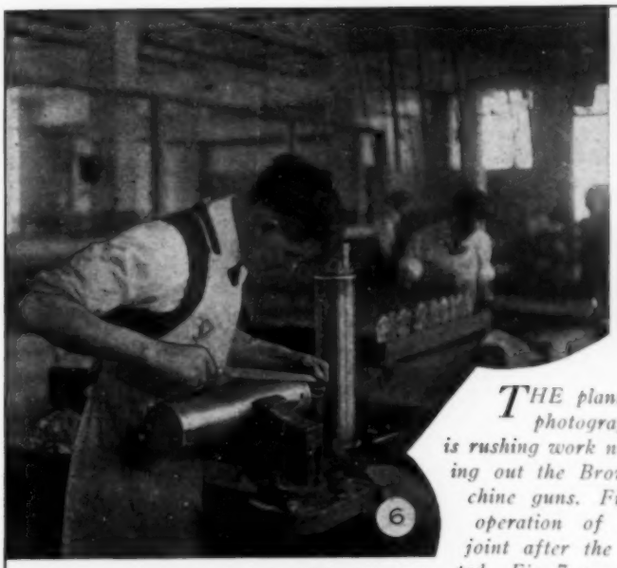
BROWNING heavy machine guns are now being produced in great numbers for the United States army, their efficiency having been demonstrated to the satisfaction of war department officials. Fig. 1, final adjusting of bolt action and assembling. Fig. 2, milling trunion on butt end of barrel. Fig. 3, forge shop, where the hot barrels are put through rolls 11 times. Fig. 4, gang saw cuts four pieces from bar at one operation. Fig. 5, indoor firing test.

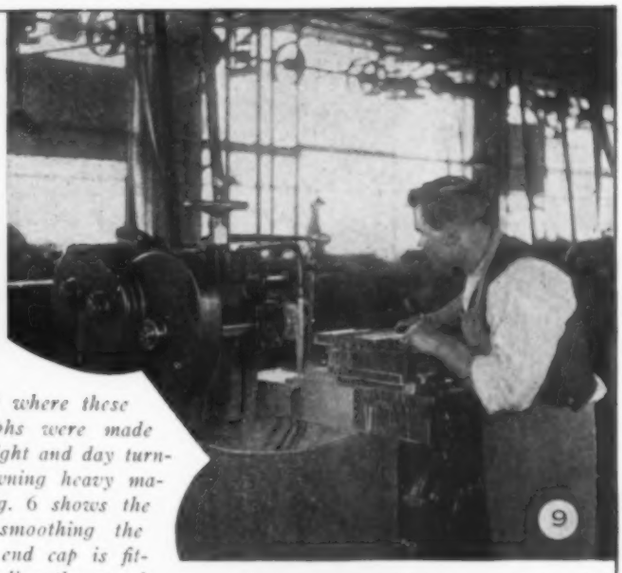




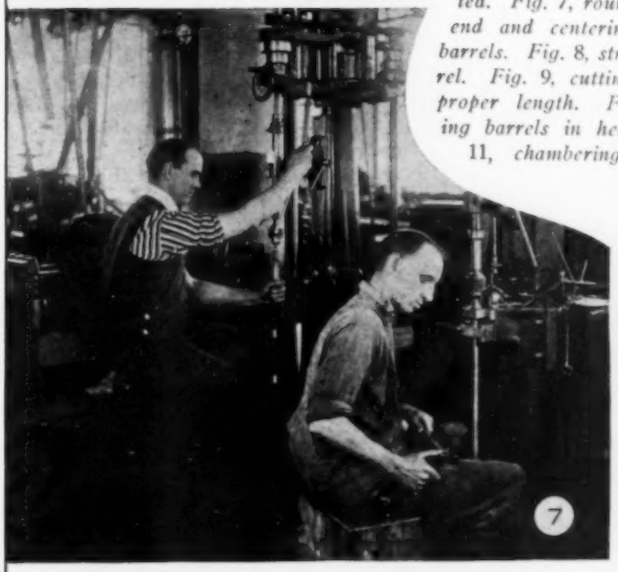


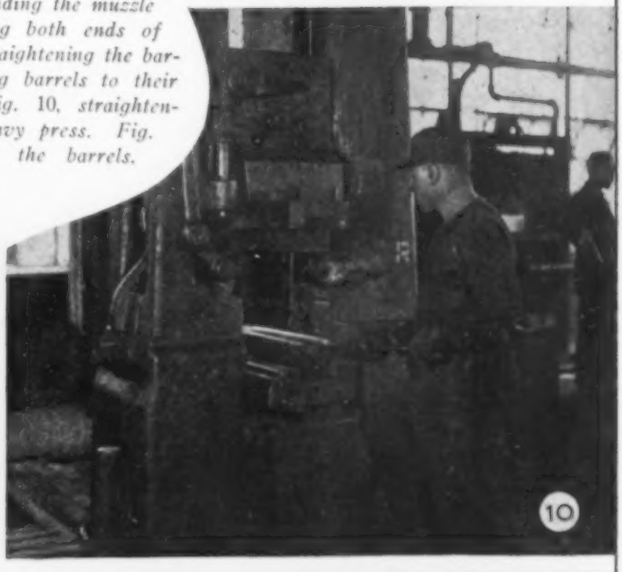
The Browning Heavy-Machine Gun


6

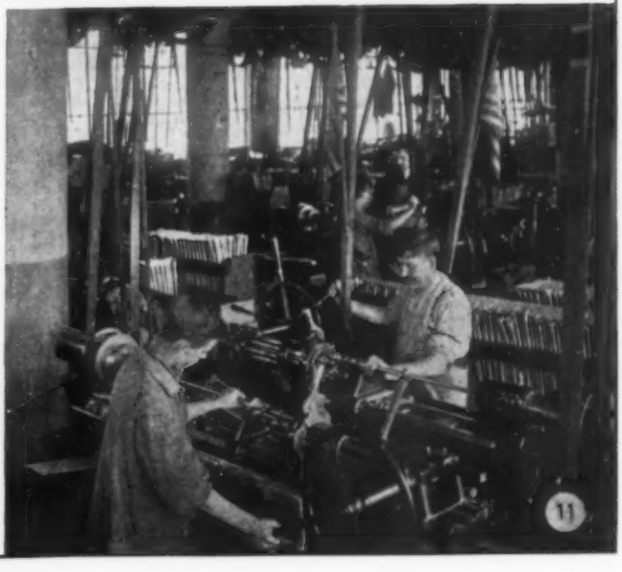

9

THE plant where these photographs were made is rushing work night and day turning out the Browning heavy machine guns. Fig. 6 shows the operation of smoothing the joint after the end cap is fitted. Fig. 7, rounding the muzzle end and centering both ends of barrels. Fig. 8, straightening the barrel. Fig. 9, cutting barrels to their proper length. Fig. 10, straightening barrels in heavy press. Fig. 11, chambering the barrels.


7


10

8


11

New Standards For French Industry

New Law Proposes Fundamental Units of Time, Electricity, Temperature, Luminosity, Weights, Density and Energy—Even Standardization of Parts is Ordered—News Notes From Paris

BY FRANCIS MILTOUN

Paris Correspondent of The Iron Trade Review

A LAW has just been proposed in the French parliament to revise the present law, in vogue since 1903, governing units of measure. It proposes to introduce new elements, to be known as fundamental units, providing for units of time, electric resistance, temperature and luminosity, as applied in science and industry. A secondary series provides for a unit of angles, density, energy and those rules of common usage which have become current but not as yet endorsed by law. Reform of weights and measures and control of all measuring instruments as to their verification according to standard are also proposed.

Plan is Sanctioned

The French Academy of Sciences has approved the project unanimously. It seems rather extraordinary that in a country where the metric system actually rules in the majority of transactions this should be necessary but local customs still make use of a pound, which is largely mythical and may mean 20 grammes up or down the scale from 453.59 grammes. Each of the old-time French provinces had its own estimate of the pound and now this is to be unified. The measure of capacity, the *litre*, .908 quarts, is not always a litre when it comes to bottled goods. The mass unit is to be definitely fixed as the kilogram, 1000 grammes, and the thousand of these will be a near approach to our long ton, a fact heretofore not always taken into consideration in our consular reports when quoting supposed facts and figures. Temperature is still to be counted in centisimal degrees, but legalized to the extent that no other method will be recognized, the standards being those first legally adopted by a decree of 1889 and 1913. Luminosity will have for its unit the *bougie*, or candle power, the decimal *bougie* being 1/20 of the standard of *Violle*, arrived at from the luminosity of a square centimetre of platinum conforming to decisions arrived at at the international conference in Paris in 1889.

This new system of French measures will be known specifically as the *Systeme M. T. S.* (metre, ton and second) and its absolute application is asked for in all transactions in France, although combatted by Monsieur Dominique Delahaye, of the French senate, who, for what reason is not quite clear, calls it a *systeme boche*. At all events the project is set forth in the French congressional record, the *Journal Officiel*, so it may be taken as representing the need of legalizing all transactions where specifications are called for.

* * *

Standardization is a measure which has come into being but slowly in France. The French iron, steel and woodworking mechanic never expects a thing to fit in its place and himself loves to give the traditional *coup de lime*, the fitting into place of any accessory or element of his production. Quite in accord with the new proposal for standards is an official ruling by the ministry of commerce, posts, telegraphs and transports that a commission shall be formed to pass upon a series of measures for adoption by these government departments and henceforth rule in all their operations. The end, as stated in the official program, is "to assure the unification of types (elements) in construction materials, particularly those of metal." This commission will be officially and permanently known as the commission of standardization. It is more or less closely attached to the government technical school at Paris, the *Ecole des Arts et Metiers*, whose consulting committee will doubtless be the officials who will have the final shaping up of the details and specifications.

* * *

General Percin, who, since his retirement from the active army, has become a writer on military topics for several of the leading French publications, has come out strongly for the multiplication of the trench cannon known as the *Cannon Archer*, from the name of its inventor, and already known in France when the German advance gave the first intimation that the armies of the central powers had many such instruments of warfare.

The argument of General Percin is this: To completely destroy 600 kilometers of first line trenches, the distance from the channel to the Swiss frontier, would cost 12,000,000,000 francs in shot and shell of heavy artillery, whereas the *Cannon Archer* might confidently be expected to do the work for 150,000,000.

Quantity of Steel Required

The necessary ammunition would only absorb the indeginous steel production of France for eight days in the latter case while in the former it would require a supply equalling that of two years' production. This production is impossible in the latter case but is possible in the former. It is not to be supposed that the question has not been studied by other experts at close range. It is possible that the American forces have studied it in all its phases.

* * *

An echo from France's most productive colony comes across the Mediterranean from Algeria. It appears that a Hiedelberg university professor has been complaining loudly at the treatment of Germany in her iron exploitations in France before the war, and has stated that Germany was hindered unwarrantedly. It seems late in the day to bring this up but the situation in Algeria, like that of the Mannesmann exploitations in Morocco, as seen in the light of recent knowledge, shows at least that French authorities were not nearly as soundly asleep as we had supposed. Quoting the professor: "The treatment accorded those who were working the Quenza (manganese) mine of Algeria was brutal, this from the fact that it was recognized that the brilliant talents of the German firm of Krupp were interested therein. The French press was against the development from the first and the French government refused to grant us a concession for the construction of a railway line and finally insisted on the participation of French capital in the enterprise. This thesis was even carried so far that a French

member of the chamber of deputies denied the right of any German capital being allowed to participate in any French colonial enterprise."

* * *

The French tax on war profits has undergone considerable modification since the recent German advance. As it now stands it exempts manufacturers who may have suffered from being in the war zone. This is not as much a matter of geography as of the military law since the *Camp Retranche* of Paris, the entrenched camp of Paris, as it has been since the beginning of the war, has now become the army zone, as has indeed all the Mediterranean coast line of southern France. In brief the regulation is to be applied thus:

"The minister of finances believes that a benevolent attitude is demanded in the application of the war profits tax to those who may have been the direct victims of the events of the war. In consequence a tolerance in the payment of said taxes will be accorded: Those who may have been located in the region contained in the limits of the recent German advance, those of the zone where military movements toward the lines are actually taking place or have taken place and those, who, as a result of the war, have actually suffered material damages."

* * *

Two industrial notes concerning Spain are just being given publicity in French metallurgic circles. The Spanish railways are on the eve of being nationalized if the *Ministero de Fomento* can complete the project. This news has made a great impression in all construction circles and suggests that rails and ties from the peninsula will no longer be available for France in case Spain should seek to reserve these supplies for her state railways. Raw material in Spain so far as affecting those elements most necessary to construction and war industries have risen in price quite as formidably as in the belligerent countries. Iron has advanced 260 per cent, tin 325 per cent, zinc 136 per cent, lead 42 per cent and glass 245 per cent.

* * *

The puissant *Comite des Forges* of France has shown a remarkable expression of hommage to one of its principal members, F. de Wendel, by electing him president. This is a great compliment to the Lorraine iron-master and will give great satisfaction to his colleagues.

* * *

A new company with a capital of 1,000,000 francs, but which actually may be but an expedient to cover for the time being a more elaborate formation, has been founded at Saint Chamond in the very center of the iron-producing region of mid-France, under the title of *Societe Anonyme des Forges de Lavieu*. Its prospectus announces its object as the "manufacture of agricultural machinery," and the duration of the association is to be for 99 years.

Danger to Equipment From Impure Coal

BY W. S. GOULD

IN addition to the well-established loss in efficiency and capacity of our power plants, due to the higher percentage of the ash impurity, we should not lose sight of the further loss in efficiency and capacity due to the increase in the sulphur content of coal. Sulphur in coal affects the economy of the boilers by forming clinkers, which hinder the proper distribution of air. This improper distribution may be excess or deficiency of air.

It has been found that while the drop in the combined efficiency of the boiler and furnace averaged about 0.5 per cent for each per cent of sulphur between 0.5 and 6 per cent, the general drop in boiler capacity is about 1.5 per cent for each per cent of sulphur. The increased amount of clinker, due to the higher sulphur percentages, is doubtless responsible for this drop in the capacity, reducing the rate of combustion and therefore capacity. This loss is in addition to the losses estimated for increase in the ash impurity and the relatively greater loss in heat due to weathered coal.

Before 1916 eastern coals that carried sulphur in excess of 3 per cent were not common. Since that time the cases of 5 and 6 per cent sulphur, and some almost incredibly high, have steadily increased, until during the last winter it has been quite the exception to find coals with less than 2 per cent.

Damage to the Equipment

Then there is the damage that sulphur causes to the tubes, plates and grates of the equipment—a damage that is usually difficult to measure, especially since it is generally unexpected by the plant engineer, or comes when he has no time to make exact calculations or cannot get information as to his coal. Just two examples of the many cases that have come under our own observation may be given:

A plant equipped with stokers had been using a certain coal which did not average high in sulphur—about 1.60 per cent, but of a character that often causes trouble under similar conditions. The plant had been running wild, with a low rate of efficiency, and there had been no special trouble with the grate bars, which had stood up for weeks. Better operating methods were inaugurated, and the grate bars began melting at an alarming rate, some in about a week. Ordinarily, the cause of this trouble would have been laid either to the operating methods, and therefore a necessary evil, or to the grate bars. We selected, through our library of coal records, a coal of equal heating value but without the characteristics of the coal being used at the plant, and the trouble with the grates ceased.

Another case was in a plant with flat grates, hand-fired, and running at a low rate of combustion. This plant had been using a coal which was excellent so far as ash and heat were concerned, but which averaged about 2 per cent sulphur. The boilers not being forced, there had been no appreciable damage from the sulphur in the coal. A new lot of coal arriving, showing about 3.50 per cent sulphur, but otherwise being about as usual, I suggested that, with their operating conditions, they would probably find little trouble from clinkering, incidentally remarking that the only probable damage would be to their equipment. The superintendent asked if that were not more or less imagination, so I suggested his making a simple test of the point. One boiler was carefully cleaned and practically new grates installed. It was arranged that the 3.50 per cent coal should be used exclusively under this boiler for one day, and then the fires pulled and an estimate made of any damage that could be observed. A few days later we received a letter from the superintendent stating that the test was run as directed, and that "after four hours the grates were entirely destroyed."

Abstract of a discussion presented by W. S. Gould, president, Fuel Engineering Co., New York, at the spring meeting of the American Society of Mechanical Engineers, at Worcester, Mass., June 4-7, 1918.

550-Foot Ore Bridge Built in 65 Days

Tornado Was Swift in Destroying Two Bridges at Bethlehem Steel Co.'s Plant, But Company Showed Some Speed, Too, When it Built New Structure From Ore in its Own Yards

ON the evening of May 27, 1918, Bethlehem, Pa., was visited by a severe rain, wind and electrical storm which developed at certain points the destructiveness of a tornado. Trees several feet in diameter were twisted off and uprooted and the storm left havoc and destruction in its wake. In passing over the Bethlehem Steel Co.'s plant it paid particular attention to the two Hoover & Mason ore bridges with the result that they both were upset and irretrievably damaged. These two bridges traversed a runway extending north and south, and as the direction of the storm was southerly, the bridges offered the maximum area to wind pressure. The holding mechanism of the northern bridge let go and the bridge traveled approximately 200 feet, striking the second bridge at the center of the runway and starting it off with tremendous impetus, which, assisted by the high gale, drove the bridge with a velocity of approximately 30 miles an hour over the end of the tracks. At this point the second bridge's supporting towers left the trucks and collapsed as shown in Fig. 1. After hitting and starting the second bridge on its way to destruction, the first bridge left its trucks and collapsed into a tangled mass of steel as shown in Fig. 2.

The loss of two ore bridges proved a serious handicap, particularly at a time when ore was being placed in storage for winter requirements and thousands of tons were in transit and in the plant storage yards awaiting unloading. This situation was overcome to a great extent by placing temporary tracks on top of the ore piles and conveying the ore from the car dump bins by means of power driven side-dump cars. By this method of unloading the steel company was able to handle the incoming ore in a fairly satisfactory manner, but at a greater cost. The necessity for replacing the bridges was of vital importance and the speed of reconstruction was noteworthy.

The bridges were wrecked about 7:30 p. m. May 27. The work of demolition and cleaning up was concentrated on the bridge at the south end of the runway and in three days the main tracks connecting the Lehigh and Saucon plants which were blocked by the wreckage were opened to traffic. This work was greatly facilitated by the use of gas torches.

The greatest problem was to manufacture new trucks in time that towers and bridges could be erected directly thereon without the use of sand jacks and supporting falsework which would have meant extra work and delay. The first truck was placed on the runway July 1 and the second July 7. The plates for these trucks were produced from the ore at the Bethlehem Steel Co.'s Sparrow Point plant. The wooden bents and falsework for the erection of the bridges were started June 15 and finished July 3. Erection of steel was started July 2 and was completed July 26; the final shipment being received July 11. Riveting was started July 14 and completed July 28. Thirty-two thousand rivets were driven in the field. The total weight of the structural steel work fabricated is 850 tons, and the machinery, exclusive of bucket, 95 tons additional. These two bridges are of the Hoover & Mason type. The total length of each bridge is 550 feet, the distance from center to center of towers, 252 feet, and the capacity, 15 tons.

The first bridge was finished at 12:30 p. m., July 31, as shown in Fig. 3, and was placed in operation at 3:00 p. m. the same day, giving a total elapsed time for the fabrication of the bridge, manufacturing all necessary machinery, installing it and plac-

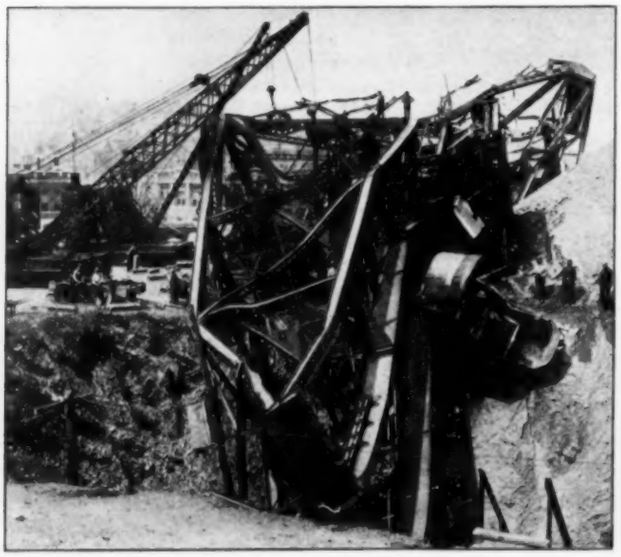


FIG. 1—A SHELL FROM A BIG BERTHA COULD NOT HAVE DAMAGED THIS BETHLEHEM STEEL CO.'S ORE BRIDGE MORE THAN DID A STORM ON MAY 27. BUT IT DID NOT TAKE THE COMPANY LONG TO REACT AGAINST THE ENEMY

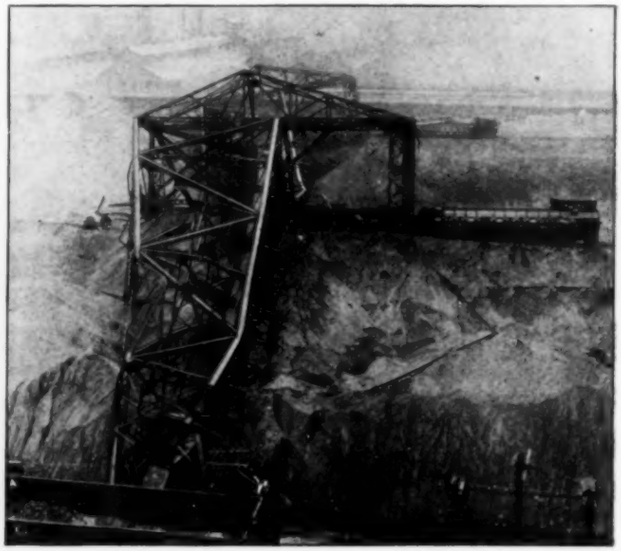


FIG. 2—THIS BRIDGE WAS DASHED TO DESTRUCTION AFTER ITS HOLDING MECHANISM LET GO AND IT WAS BLOWN ALONG ON ITS RUNWAY, STRIKING THE BRIDGE SHOWN IN FIG. 1 AND SENDING IT SPRAWLING HEADLONG

FIG. 3—THE COMPANY SET TO WORK THE SAME DAY TO REMOVE THE DEBRIS OF THE WRECKED BRIDGES AND BUILT WITHIN 65 DAYS THIS 550-TON ORE BRIDGE, FABRICATED FROM MATERIALS DIRECT FROM THE ORE IN ITS OWN YARDS

ing it in operation, of 65 days. The structural steel work was fabricated and erected by the Bethlehem Steel Bridge Corp., Steelton, Pa. The remainder of the work, covering trucks, trolley and all machinery therefore, was made in the Lehigh plant of the Bethlehem Steel Co., with the exception of a few special parts which were furnished by Hoover & Mason. All the materials and parts were assembled and placed in operation by the Bethlehem Steel Co.'s service departments. The second bridge is now undergoing reconstruction and while the necessity for its service is not so great, it is hoped that this bridge will be placed in operation in approximately 90 days from the date on which reconstruction was begun.

Chemists to Convene

What promises to be the greatest convention of chemists and chemical engineers ever held in the history of that profession, is scheduled to open September 23 at the Grand Central Palace exposition hall in New York City. Thousands of chemists from all parts of the country have signified their intention to attend the meetings, which are to be held coincident with the fourth national exposition of chemical industries. Many chemical and technical organizations will be represented together with manufacturers of machinery, munitions and equipment of all kinds. The convention is to last a week. Efforts are to be made at the exposition to show the people of America the part chemistry and its allied industries and professions are playing in helping to win the war. The convention is expected to bring to light many marvelous results of recent research work. Many engineers and experts who hold high positions in the advance of the industry are to be speakers, and it is expected the proceedings will develop matters of timely study not only to delegates but to the public in general.

Realizing that the exposition is in a way a wartime necessity, each exhibitor is planning his exhibit so that it will be of the greatest benefit to the manufacturer and munition maker who is producing the sinews of war. Papers covering every phase of the chemical industries and a discussion as to what steps to follow after the war, will be presented by leading men of the industry.

The advisory committee of the exposition is composed of Charles H. Herty, chairman; Raymond F. Bacon, L. H. Baekeland, Ellwood Hendrick, Henry B. Faber, Bernard C. Heese, A. D. Little, W. H. Nichols, R. P. Perry, H. C. Parmelee, G. W. Thompson, F. J. Tone, T. B. Wagner and M. C. Whitaker. Charles E. Roth and F. W. Payne are the managers. Dr. Bacon of the committee, is the head of the chemical welfare section of the national army and is a member of General Pershing's staff.

Book Review

Fundamentals of Cost and Profit Calculation, by Robert S. Denham; published by Cost Engineer Publishing Co.; cloth, 120 pages; 5 x 7¼ inches; furnished by THE IRON TRADE REVIEW for $1.00.

A book on the definition of cost and profit should prove particularly helpful at this time when the country is struggling to arrive at the proper basis for its income tax return. The author makes a radical departure from customary treatment of the subject by refusing to juggle with such terms as "prime cost", "overhead expense", "gross profit" and the like. He says these classic expressions are vague and the cause of much inaccuracy in the distribution of charges. He assumes, instead, that every individual expense has a definite amount, purpose and benefit, and outlines a practical method for determining what it is.

The book is pertinent and interesting as it deals with the problems which confront the business man of today, who is called upon to make numerous estimates, statements and returns requiring careful computation of cost and profits. The book will prove constructive and valuable.

Cutting Small Forging Ingots with Oxy-Hydrogen Flame. Note How the Ingots are Piled on Steel Rails, So That When They Are Partially Cut the Ends May be Broken by Dropping a Steel Ball From a Crane Magnet

Cutting Steel Ingots With Oxy-Hydrogen

BY W. B. PERDUE

PRIOR to cutting a 28-inch forging ingot at the plant of the West Coast Iron & Steel Co., San Francisco, several inquiries were sent to prominent authorities in the country, most of whom replied in substance as follows: "If you understand how to handle a torch all that is necessary is to use a big tip with plenty of oxygen pressure and plug right through."

Tests showed that the heat at the side of the cut opposite the torch is not sufficient to prevent the metal from chilling and that a shallow cut made on the opposite side tends to keep the metal hot where the oxide is forced out thus preventing "pocketing." I was called upon to supervise the cropping of heavy-forging ingots made of open-hearth steel by the Judson Manufacturing Co. at their Oakland and Emeryville plants. With a capacity of 4000 tons per month, this work assumed a magnitude requiring the establishment of a fixed method whereby the cost of making each cut could be accurately predetermined and the cutting costs reduced to a minimum.

The author W. B. Perdue, is oxy-hydric engineer for the Judson Manufacturing Co., San Francisco.

Cost of Cutting is Low

Many forgers declare that ingots can be cut to the weight or length required at a cost much less than they can crop them even after the ingots have been heated for forging. The gas pockets that form near the top of exceptionally large ingots render that portion unfit for use in high-grade forgings. The removal of this portion by means of a machine torch will cost more than removing it by means of a hand torch. In this connection a hand torch must have a 90 degree head and must be pivoted on the left hand by moving the right hand in the reverse direction to that of the cut. Steadying the torch by means of guide wheels should not be attempted. Such contrivances, rolling over the rough surface of the ingot, do more harm than good. For cutting off the section containing gas pockets a cutting tip with a central oxygen jet 0.161 inch (No. 20 steel wire gage) in diameter should be used. Six heating jets are employed, each of which has an area of 0.0024 square inch. The heating gases are forced through these small openings under considerable pressure which eliminates backfires.

All orifices in the torch through which the high-pressure oxygen passes must be of sufficient size to permit a free and unlimited flow of oxygen directly to the tip when the cutting valve is opened. In some torches this high-pressure jet is made with several 90-degree bends which is a decided disadvantage. Experience with torches which mix the heating gases in the tip has proved them to be satisfactory. It costs less to make a torch with straight tubing to the head than one with a specially designed mixing chamber, but here, as in many other cases, cheaply constructed apparatus costs more to operate. Some attention must be given to hose and fittings. The inner diameter of the hose should not be so small as to reduce the pressure of

the gas flowing through it; neither should it be too large, as that weakens it. One-fourth inch, 9-ply high-pressure oxygen hose should be used. The connections to the regulators and torch are threaded with ¼-inch standard male threads. Therefore, any nut with ¼-inch standard female threads will fit.

Care of Regulators

To maintain uniform pressure and to avoid freezing the regulators, it is essential to couple to more than one cylinder of oxygen. This is done by means of a three way Y made of bronze. Into the outlet of this Y is screwed a bushing similar to those ordinarily used to attach the hose to the regulator. Into the three inlets needle valves are screwed so as to enable the operator to set each regulator to the proper working pressure before connecting them together. All threads are ¼-inch standard size. To connect these needle valves to the regulators short lengths of hose are necessary. To prevent leakage, a mixture of litharge and glycerine is rubbed onto the threads of the bushing and needle valves before screwing them into the bronze Y. It is necessary that all fittings are free from oil before using. After inserting the tail fittings in the hose and placing clamps loosely around them a large copper wire is placed inside the tail piece and enough heat applied to the outer end to warm the rubber slightly. The clamps then bind the rubber and cause it to stick firmly to the tail piece. At the same time a piece of iron baling wire is wound twice around the hose and, holding one end in a vise and the other in pliers, the hose is rolled back and forth until the wire grips thoroughly. In order to twist the wire the hose is given a full turn.

Oxygen pressures as ordinarily used; namely 10 pounds per inch of thickness of metal would amount to 280 pounds for 28-inch metal. It may be said that when speaking of oxygen, reference is made to pure electrolytic oxygen. Oxygen with 1 to 2 per cent of nitrogen greatly retards the cutting action. To avoid the use of such extreme pressures the large tip previously mentioned is used. With these large tips a pressure of 140 pounds or five pounds for each inch of thickness is adequate. Hydrogen pressure should be about one-third as much as the oxygen pressure, and at all times must be sufficient to force a long, strong heating flame well down into the cut. The use of a tip in which the heating jets are too large will retard the speed of cutting and leave a V-shaped opening at the top. When it is desired to judge the character of the steel by means of a fracture near the center of the ingot the first cut is taken across the bottom of the ingot. The tendency of the metal on the other side will be to chill the cut, and unless the side of the cut next the torch is rapidly carried, a "pocket" will be formed. The hot slag is shoveled away and the cut started on the opposite side. The shift should be made quickly in order to take advantage of the heated condition of the metal.

Indiana Coal Must Have Plenty of Draft

Indiana coal must have plenty of draft and many of the troubles that were experienced last winter with the coal produced in that state might have been avoided if more attention had been given the matter of air space in the grate. These are the views of Carl J. Fletcher, fuel engineer, Knox County Coal Operators' association, Indianapolis, in a discussion on the economical use of fuel read at the spring meeting of the American Society of Mechanical Engineers at Worcester, Mass., June 4-7, 1918. Mr. Fletcher's contribution follows:

During last winter much coal was wasted throughout Indiana due to the forced change in fuel. There are three very marked differences between the coal mined in Indiana and that mined in eastern Ohio, Pennsylvania and West Virginia: First, the amount and quality of the volatile matter; second, the liability to clinker; third, the form in which the impurities occur in the coal as delivered at the boiler room.

Regarding the volatile matter, the eastern coal is higher in hydrogen,

CUTTING AN EXTRA LARGE FORGING INGOT WITH THE OXY-HYDROGEN FLAME. THE CUT IS STARTED ON THE UNDERSIDE OF THE INGOT, THUS PREVENTING THE MELTED STEEL FROM DROPPING INTO THE PATH OF FLAME AND HINDERING THE CUTTING ACTION

making the volatile gases more easily combustible, also less in volume. The principal trouble in burning Indiana coal lies in lack of combustion space, which is necessary for the burning of very high-volatile coal, and a proper distance from the fuel bed to the comparatively cold boiler plates, which robs the furnace of heat and does not allow a sufficiently high temperature for the combustion of all the volatile matter.

Second, the clinkering of coal, when western coal has been substituted for eastern coal, is due primarily to the fact that there is more iron pyrites in Indiana coal. Iron pyrites can be successfully burned without objectionable clinkering under proper conditions. More draft is required to burn Indiana coal, both to keep the grates cool and to get a proper mixture of the volatile matter with oxygen. It often happens that in planning for a change to Indiana coal the grate surface is enlarged, reducing the available draft over the fire, when the proper procedure in this case would be to increase the force of draft.

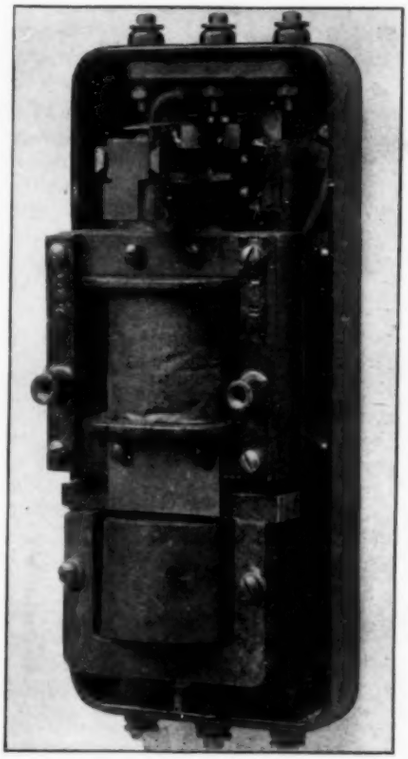
Regarding the difference in the form of impurities in eastern and western coal, the impurities in Indiana coal appear mostly as shale, which cannot be burned; whereas, ash in the eastern coal is generally evenly distributed throughout the coal, and when eastern coal is burned it is a comparatively easy matter to free the fuel bed of ash. Shaking grates, such as are suitable for eastern coals, generally fail when applied to western coal. It does not do any particular harm to stir and mix some coals, while other fuel beds must not be disturbed. To burn Indiana coal it is necessary to have a type of grate with at least 50 per cent air space, and a grate which will crush the larger pieces of impurities and remove these impurities with a minimum disturbance of the burning fuel.

Study Cutting-Tool Alloys

The installation of an electric furnace of the arc type, with three 75 kilovolt-ampere transformers, is being completed in the chemical engineering college of the University of Wisconsin and will provide the school with probably the most extensive and elaborate metallurgical laboratory in any state university in the country. The chemical-engineering department will undertake extensive research work in the smelting of unusual metals for the purpose of developing alloys for use in the production of cutting tools and for chemical apparatus and machinery subject to corrosion and oxidation. The equipment makes it possible to perform all processes, from smelting the ore to the production of alloys.

Novel Transfer Relay For Circuit Breakers

Protective relays which operate by closing a separate direct-current tripping circuit recently have come into general use. However, in some cases a separate direct-current tripping circuit is not available and the use of "transfer" relays is the best solution so far obtained.



TRANSFER RELAY WITH COVER REMOVED

These relays energize the trip coil off the circuit breaker through current transformers.

The breaker operates through the current transformer and the relays. When there is no fault on the line, the trip coil of the breaker is mechanically and electrically isolated from the circuit, avoiding possibility of tripping due to imperfection in the relay contacts ordinarily shunting the trip coil. The relay contains three series coils. The holding coil holds down the armature core, until the releasing coil, wound on the same magnetic circuit, is short circuited by the protective relay. The releasing coil acts as the secondary of a transformer and when short-circuited, a current flows through, demagnetizing the core. The holding coil, therefore, allows the operating coil to raise the core which operates the transfer switch, closing the trip coil circuit.

The transfer switch and other current carrying parts of the relay are designed to carry 5 amperes continuously, but during times of short circuit the switch can handle as high as 100 or 200 amperes. A current transformer must be selected of sufficient capacity to operate the protective relay, the transfer relay and the trip coil. Low ratio bushing-type current transformers are not suitable. Only one trip coil is required for use on a polyphase circuit, but if the breaker is equipped with as many trip coils as there are relays, it is advisable to connect each trip coil to its corresponding relay.

Tin Plate Substitutes

By Thos. J. Swain

The tin plate shortage has become so acute in Australia that the director of munitions has asked the commonwealth advisory council of science and industry to investigate the matter of suitable substitutes. A special committee was appointed to make the investigations and although its work is not complete it has made some interesting suggestions. A great quantity of tin in the form of cassiterite abounds along certain river courses in the northern part of Victoria. It is suggested that this mineral, which has been left untouched for lack of capital and enterprise, now be utilized. Another suggestion is that cardboard be used as much as possible in packing dry products. Paraffined cardboard is in use in England as a substitute for tin. Containers with tin tops and bottoms and paraffined cardboard sides are being made to hold molasses and syrup. It has been found that a cardboard which has been sized with glue and heated with a synthetic varnish, is suitable for this purpose. The committee will give the formula for the varnish to those wishing it.

Book Review

Concrete Engineers' Handbook, by George A. Hool and Nathan C. Johnson; leather; 885 pages, 9 x 6 inches; published by the McGraw-Hill Book Co., Inc., and furnished by THE IRON TRADE REVIEW for $5 net.

This handbook contains data for the design and construction of plain and reinforced concrete structures. It is intended as a working manual for the engineer and contains interesting information in regard to the making and placing of concrete. The volume is illustrated by numerous tables and diagrams.

Metal Congress Program Perfected

Production of War Materials to be Discussed from Every Angle at Meeting in Milwaukee, Week of Oct. 7—Machines for Making Munitions to Feature Exhibits—Every Branch of Metal Industry to be Represented

DURING the week of Oct. 7, Milwaukee will be the center of attraction of the metal-working industry of this country. The simultaneous meetings of the American Foundrymen's association, iron and steel section of the American Institute of Mining Engineers, Institute of Metals division of the American Institute of Mining Engineers and the American Malleable Castings association, combined with the government exhibition of all kinds of labor-saving, metal-working equipment, will assume the proportion of a great allied metals congress.

Every branch of the metal industry will be represented, including the gray iron, steel, malleable iron and brass foundry trade; iron and steel industry from the mining of the ore to the production of pig iron, its conversion into steel and finally the rolled product and the brass and copper rolling mill industry. The keynote of many of the addresses and papers that will be presented will be the acceleration of production for the prosecution and winning of the war. In fact, the purpose underlying the holding of this allied metals congress is to afford manufacturers of ordnance and other war equipment an opportunity for an interchange of ideas regarding methods of production and to ascertain, if possible, how their practice may be improved.

The great interest that is being manifested in this event is reflected by the large number of reservations for space in the Milwaukee auditorium, where the exhibition will be held. Already 165 manufacturers have closed contracts for representation in the arena and machinery hall and only a comparatively small amount of space is still available. Indications point to the largest show of this kind ever held in this country.

Entertainment Features

The manufacturers of Milwaukee have organized to provide for the entertainment and reception of the visitors. The program, although not definitely outlined, will include a reception and dance at the Milwaukee auditorium, theater party and in addition the ladies will be taken on an automobile sightseeing tour and will be tendered several luncheons. Plant visitation probably will be confined to Thursday and Friday and many of the notable plants in the Milwaukee district have signified their willingness to permit the inspection of their works at this time. On Thursday evening, Oct. 10, the banquet will be held and addresses will be delivered by speakers of international fame. The following committees has been appointed for the reception and entertainment of the visitors:

General Committee

Theo. O. Vilter, chairman, president, Vilter W. G. Bruce, Milwaukee Association of Comkee Metal Trades and Founders' association; A. E. Harrison, superintendent foundry and pattern shop, Allis-Chalmers Mfg. Co.; E. W. Bearman, Illinois Steel Co.; John D. Bird, general manager, Power & Mining Machinery Co., Cudahy, Wis.; James L. Marshall, general manager, Geo. H. Smith Steel Castings Co.; W. G. Bruce, secretary, Milwaukee Association of Commerce; Henry Weber, chairman, Milwaukee park board; Geo. Kuemmerlein, superintendent of transportation, Milwaukee Electric Railway & Light Co.; A. E. Copeland, manager, Hotel Wisconsin; W. P. O'Connor, general agent, Goodrich Transportation Co.; F. C. Reynolds, general agent, Pere Marquette railroad, and Jos. C. Grieb, manager, Milwaukee auditorium.

Finance Committee

Theo. O. Vilter, chairman, Vilter Mfg. Co.; W. G. Bruce, Miluwaukee Association of Commerce; C. R. Messinger, Chain Belt Co.; J. D. Bird, Power & Mining Machinery Co., Cudahy, Wis.; T. A. Glasscott, Pickands, Brown & Co.; John Thomas, Thomas Furnace Co.; A. J. Lindeman, Lindeman & Hoverson Co.; Otto H. Falk, Allis-Chalmers Mfg. Co., and Walter Kasten, treasurer, finance committee, Wisconsin National Bank.

Entertainment Committee

Geo. Kuemmerlein, chairman, Milwaukee Electric Railway & Light Co.; Henry Weber, Milwaukee park board; J. J. McDevitt, S. Obermayer Co.; John Mertes, Federal Foundry Supply Co.; E. B. Lemon, chemist; T. A. Glasscott, Pickands, Brown & Co.; James L. Marshall, Geo. H. Smith Steel Castings Co.; F. C. Reynolds, Pere Marquette railroad, and J. S. Pinson, Avery Co.

Golf Committee

J. D. Bird, chairman, Power & Mining Machinery Co., Cudahy, Wis.; C. R. Messenger, Chain Belt Co.; David McLain, McLain's System; F. E. Layman, chemist, and C. G. Ocock, Avery Co.

Reception Committee

E. W .Bearman, chairman, Illinois Steel Co.; Frank Cleveland, Milwaukee Association of Commerce; David McLain, McLain's System; J. D. Shaw, Shaw Foundry Co.; E. A. Wurster, Falk Co.; J. J. McDevitt, S. Obermayer Co.; Henry R. Donald, Essley Machinery Co.; T. A. Glasscott, Pickands, Brown & Co.; O. B. Pupikofer, American Gum Products Co.; W. J. Fairbairn, Milwaukee Metal Trades & Founders' association; Roy Smith, Hotel Pfister; A. E. Copeland, Hotel Wisconsin; Henry W. Wehr, Wehr Steel Castings Co.; Herman Kletzsch, Republican House; W. W. Sommers, Hotel Carlton; W. M. Nefzger, Hotel Schlitz; S. Duffy, Hotel Plankinton, and F. B. Sweeney, Hotel Maryland.

Plant Visitation Committee

A. E. Harrison, chairman, Allis-Chalmers Mfg. Co.; James L. Marshall, Geo. H. Smith Steel Casting Co.; H. R. Donald, Essley Machinery Co.; Wells K. Gregg and H. G. Siefert.

Banquet Committee

W. P. O'Connor, chairman, Goodrich Transportation Co.; A. E. Copeland, Hotel Wisconsin, and H. Weber, Milwaukee park board.

Theater, Automobile and Boat Excursion Committee

James L. Marshall, chairman, Geo. H. Smith Steel Casting Co., and J. J. McDevitt, S. Obermayer Co.

Ladies Committee

A. E. Copeland, chairman, Hotel Wisconsin; F. C. Reynolds, Pere Marquette railroad; Henry Weber, Milwaukee park board, and O. B. Pupikofer, American Gum Products Co.

The meetings of these organizations will be opened on Tuesday morning with a joint session, at which the address of welcome will be delivered by Emmanuel L. Phillip, governor of Wisconsin. This will be followed by addresses relating to the importance of the metal-working industry in the prosecution of the war, to be delivered by speakers of note who are familiar with the activities at Washington. Upon adjournment, the opening sessions of the American Foundrymen's association, iron and steel section and Institute of Metals division of the American Institute of Mining Engineers will be called to order in separate halls in the Milwaukee auditorium, where the activities of the allied metals congress will be centered. The exhibition will be formally opened on Monday afternoon, Oct. 7. Beginning Tuesday, Oct. 8, the American Foundrymen's association will hold daily meetings, confined to the morning only, and on several days simultaneous sessions will be necessary to dispose of the lengthy program by Friday noon, Oct. 11. The Institute of Metals division of the American Institute of Mining Engineers will have one meeting on Tuesday, two on Wednesday and one on Thursday. The iron and steel section of the American Institute of Mining Engineers will hold three meetings and will adjourn Wednesday afternoon. Only one meeting is scheduled by the American Malleable Castings association.

Moving Pictures a Feature

One of the notable features of these meetings will be the large number of interesting moving pictures that will be shown. These will include the use and

manufacture of hand grenades; the civil re-establishment of wounded and crippled Canadian soldiers; the manufacture and launching of ships at the Hog Island yard, Philadelphia; the building of concrete ships; the manufacture of steel by the triplex process, and the cause and prevention of industrial accidents.

A tentative program of the topics that will be discussed at the sessions of the American Foundrymen's association follows:

"Sand-Blasting Equipment," by C. T. Bird, Pangborn Corp., Hagerstown, Md.

"Engineers—Their Relation to the Foundry in the Saving of Labor," by E. S. Carman, Cleveland Osborn Mfg. Co., Cleveland.

"Pouring Devices," by Mark P. Ohlsen, Brillion Iron Works, Brillion, Wis.

"Effective Means of Improving the Quality of Sand Mixtures," by H. B. Hanley, New London Ship & Engine Co., Groton, Conn.

"Common Troubles in Cupola Practice Which Tend to Cut Down Production," by G. S. Fisher, Whiting Foundry Equipment Co., Harvey, Ill.

"Women in Foundries," by C. E. Knoeppel, C. E. Knoeppel & Co., New York.

"Organizing a Foundry for Tractor Production," by Paul M. Ramp, Moline, Ill.

"Coke Problems of the Foundryman," by J. A. Galligan, Pickands, Brown & Co., Chicago.

"Recent Developments in Burning Oil in Cupolas," by John Howe Hall, Taylor-Wharton Iron & Steel Co., High Bridge, N. J.

"Continuous Operation of a Two-story Foundry," by J. F. Ervin, Michigan Motor Castings Co., Flint, Mich.

"Sale and Distribution of Foundry Pig Iron in War Times," by C. J. Stark, editor, THE IRON TRADE REVIEW, Cleveland.

"Concrete Foundry Floors," by George Moyer, Textile Machine Works, Reading, Pa.

"Training Your Own Help Instead of Competing with Other Manufacturers," by Ernest Van Billiard and T. Hough, Jr., General Railway Signal Co., Rochester, N. Y.

"Blowers," by J. Trinks, Pittsburgh.

"Precipitation of Dust in Foundries," by H. D. Egbut, Research Corp., New York.

"Pyrometers and Their Application to Core Ovens," by J. P. Goheen, Brown Instrument Co., Philadelphia.

"Cast Iron in Service Projectiles and Trench Warfare," by Major Edgar Allen Custer, Pittsburgh district ordnance department, Pittsburgh.

Moving picture film on the "Manufacture and Use of Hand Grenades," by Major Frank B. Gilbreth, Providence, R. I.

"A Rapid Method for the Determination of Graphitic Carbon," by Frank H. Kingdon, metallurgist, Sullivan Machinery Co., Claremont, N. J.

"Cores in the Foundry," by Walter F. Prince, Elizabeth, N. J.

Malleable Iron Foundry Practice

"Some Features of Malleable Iron Practice," by J. G. Garrard, Northwestern Malleable Iron Co., Milwaukee.

"Soundness," by Enrique Touceda, Albany, N. Y.

"Annealing Malleable Iron," by H. E. Diller, General Electric Co., Erie, Pa.

"Use of Malleable Castings," by H. A. Schwartz, National Malleable Castings Co., Indianapolis.

"White Rim or Picture Frame Fractures," by J. B. Deisher, T. H. Symington Co., Rochester, N. Y.

"Advantages of Malleable Iron Versus Steel for Agricultural Castings," by W. A. Forbes, Rockford Malleable Iron Co., Rockford, Ill.

"The Symington Core Department," by Donald S. Barrows, T. H. Symington Co., Rochester, N. Y.

Accident Prevention Conference

"The Cause and Prevention of Industrial Accidents," to be shown by moving pictures and illustrating accidents as reported to the industrial commission of Ohio.

"Accident Prevention is Good Business," by Hon. Fred M. Wilcox, vice president, Wisconsin industrial commission.

"What the State Can Do to Prevent Accidents," by Hon. Thomas J. Duffy, chairman, industrial commission of Ohio.

"What the Buckeye Steel Castings Co. Has Accomplished in Accident Prevention," by Fred G. Bennett, safety director, Buckeye Steel Castings Co., Columbus, O.

"The Importance of Organization in Accident Prevention," by C. W. Price, field secretary, national safety council, Chicago.

"The Vital Necessity of Conserving Man Power During the War," by Victor T. Noonan, safety director, industrial commission of Ohio, Columbus, O.

"What Shall be Done With the Crippled Soldier," by W. A. Janssen, vice president, Canadian Steel Foundries, Montreal, Canada.

Steel Foundry Practice

"Ordnance Steel for the Army and Navy," by John Howe Hall, Taylor Wharton Iron & Steel Co., High Bridge, N. J.

"Operating an Electric Furnace for the Production of Ordnance Castings," by W. E. Moore, Union Bank building, Pittsburgh.

"Steel Foundry Practice in the Far West," by J. D. Fenstermacher, Columbia Steel Co., San Francisco.

"Acid Versus Basic Lining for Electric Furnaces," by F. J. Ryan, Electric Furnace Construction Co., Philadelphia.

An interesting report on the heat treatment of steels Nos. 2 and 3, specified by the ordnance department also will be submitted. This will be followed by a topical discussion of the manufacture of steel for ordnance purposes by foundrymen who have had a wide experience in this work.

Metals Division Program

The program of the Institute of Metals Division of the American Institute of Mining Engineers is replete with practical topics of interest to the brass foundryman. The program follows:

Tuesday Morning, Oct. 8

"The Metallography of Tungsten," by Zay Jeffries.

"The Constitution of the Tin Bronzes," by S. L. Hoyt.

"Notes on Babbitt and Babbitted Bearings," by Jesse L. Jones.

"Oxygen and Sulphur in the Melting of Copper Cathodes," by S. Skowrouski.

"The Relation of Sulphur to the Overpoling of Copper," by S. Skowrouski, with discussion by Philip L. Gill.

Wednesday Morning, Oct. 9

Symposium on "The Conservation of Tin." This topic will be discussed by the following:

G. W. Thompson, National Lead Co.

G. H. Clamer, Ajax Metal Co., Philadelphia.

C. M. Waring, Pennsylvania Railroad Co.

M. L. Lissberger, Mark Lissberger & Son, Inc., Long Island city, N. Y.

D. M. Buck, American Sheet & Tin Plate Co., Pittsburgh.

W. M. Corse, Buffalo.

G. K. Burgess and Mr. Woodward, United States bureau of standards, Washington, D. C.

M. L. Dizer, war industires board, Washington, D. C.

A representative of the Niles, Bement, Pond Co., New York.

A representative of the bureau of steam engineering, United States navy department, Washington, D. C.

Wednesday Afternoon, Oct. 9

"The Volatility of the Constituents of Brass," by John Johnston.

"Notes on the Metallography of Aluminum," by P. D. Merica and J. R. Freeman, Jr.

"The Effect of Impurities on the Hardness of Cast Zinc or Spelter," by G. C. Stone.

"Dental Alloys," by Dr. Arthur W. Gray.

"Electrolytic Zinc," by C. A. Hansen.

"The Condensation of Zinc From Its Vapor," by C. H. Fulton.

Thursday Morning, Oct. 10

"Notes on Non-Metallic Inclusions in Bronzes and Brasses," by G. F. Comstock.

"Nichrome Castings," by Arlington Bengal.

"Fusible Plug Manufacture," by G. K. Burgess and L. J. Gurevich.

"Application of the Spectroscope to the Chemical Determination of Lead in Copper," by Messrs. Hill and Lucke.

"Radium," by Richard B. Moore.

Iron and Steel to be Discussed

The first session of the Iron and Steel Section of the American Institute of Mining Engineers will be devoted to the consideration of papers on iron and steel. The program tentatively outlined follows:

SESSION OF IRON AND STEEL

Tuesday Morning, Oct. 8

"The Limonite Deposits of Mayaguez Mesa, Porto Rico," by C. R. Fettke and Bela Hubbard.

"The Manufacture of Ferro-Alloys in the Electric Furnace," by R. M. Keeney.

"The Manufacture of Silica Brick," by H. Le Chatelier and B. Bogitch.

"Notes on Some Iron Ore Resources of the World."

"Recent Geologic Developments on the Mesabi Iron Range," discussion by Anson A. Betts and J. F. Wolff.

"A Volute Ageing Break," by Henry M Howe.

Moving pictures of the Triplex Steel Process.

SESSION ON COAL AND COKE

Wednesday Morning, Oct. 9

"The By-Product Coke Oven and Its Products," by W. H. Blauvelt.

"The Use of Coal in Pulverized Form," by H. R. Collins.

"Carbocoal," by C. T. Malcolmson.

"Low-Tempered Distillation of Illinois and Indiana Coals," by G. W. Traer.

"Price Fixing of Bituminous Coal by the United States Fuel Administration," by R. V. Norris and others.

MISCELLANEOUS SUBJECTS

Wednesday Afternoon, Oct. 9

Moving pictures showing the construction of concrete ships.

Moving pictures showing the civil re-establishment of crippled soldiers in Canada.

Strikes at Scrap Abuse

Sorting of Heavy Melting Steel and Marketing It as Unguaranteed Low Phosphorous Material Denounced by Officials

IN order to wipe out abuses of low phosphorus classification of the scrap iron and steel schedule, Chairman W. Vernon Phillips, of the subcommittee on scrap iron and steel, has sent a communication to all basic and acid open-hearth, crucible and electric steel plants, calling upon their active co-operation. His letter is as follows:

Due to an attempt on the part of many dealers, to assort their scrap for the purpose of picking out the better grade and selling it under Class 2 C; and improperly described by them as "Unguaranteed Low Phos"; a serious shortage of good heavy melting steel has arisen.

We understand there is a substantial supply of this socalled unguaranteed low phos and special steel. Some mills have gone so far as to encourage this infraction, by purchasing material of this character, and it is now necessary for us to ask the cooperation of all buyers of steel scrap to stamp out this evil, by refusing to pay over $29 delivered for any kind of steel scrap; and for acid furnaces to purchase material guaranteed under .04 in phosphorous and sulphur; excepting that specific material mentioned in Class 2 C, viz., steel knuckles and couplers; rolled steel wheels; railway steel springs; carbon tool steel and similar steel in quality and character, which will analyze .06 and under in phosphorous and sulphur.

This clause was included only for the purpose of taking care of the specific material mentioned in this clause, and such other material as may run slightly over .04, such as shell steel, ship plate, scrap, etc. It never contemplated the inclusion of structural steel or any general run of good heavy melting steel scrap.

The acid furnaces have been particularly favored in the establishment of three classifications, and should be able to get sufficient material without the encouragement of this evasion.

Any contracts which either basic open hearth or acid open hearth plants may have outstanding for socalled unguaranteed low phosphorous scrap, should immediately be revised to read strictly in accordance with the announcement. Under no circumstances may a basic open hearth plant pay over $29 per gross ton, delivered, excepting in those cases where the chairman of this committee has issued a permit enabling them to pay a differential in freight, to put them on a competitive basis. This freight differential may not be paid unless the permit has been issued, and the number thereof used, and under no circumstances may an acid or electric furnace pay over $29 for any steel other than that stipulated in the schedule.

Should our efforts to assist the mills in the regulations of this business continue to prove futile, we shall have to recommend drastic action with such mills as may have taken advantage of the reading of this clause; which is clear enough for those who wish to read it properly.

The purport of Mr. Phillips' warning is contained in the following letter to members of the American Board of Scrap Iron Dealers by C. A. Barnes, secretary of the association:

I have just received the following leter from Mr. Vernon Phillips, chairman subcommittee on scrap iron and steel of the American Iron and Steel institute.

The abuse of Section 2 C, which has been improperly designated by some of the trade as "Ungraded Low Phos" has become so serious, as to necessitate a warning to the dealers against the assorting of steel scrap for the purpose of picking out low phosphorous or special steel.

This clause was included for the purpose of permitting the shipment of steel knuckles and couplers; rolled steel wheels; railway steel springs; carbon tool steel; shell steel and similar material of a distinctly low phosphorous character; but which would fail to analyze .04 and under in phosphorous and sulphur.

It was never intended to encourage the assortment of steel for the purpose of picking out the better grades. There is sufficient low phosphorous scrap to take care of all of the steel foundries, without assorting heavy melting steel for this purpose; and should the dealers continue their attempt to secure a higher price for the better grade of steel scrap, by making such assortment, it will be necessary for us to take drastic action, in specific cases to prevent the continuance of this attempt to evade the price fixing program.

Steel scrap may be sold at only one figure, viz., $29 per gross ton, delivered; irrespective of the plant to which it is going. Special schedules have been arranged for the steel foundries, but it does not permit the foundry to pay any higher price than a basic open hearth plant for heavy melting steel of any character.

Kindly see that all of your members receive a copy of this announcement which is also being sent to the trade papers.

It is hoped that all members will follow out this suggestion, and also transmit it to other dealers who are not members.

Obituaries

SYLVANUS LATHROP SCHOONMAKER, chairman of the board of directors of the American Locomotive Co., chairman of the Montreal Locomotive Works, Ltd., director of the American Beet Sugar Co., Chicago Junction Railway & Union Stock Yards Co., General Electric Co., Norfolk Southern Railroad, and the Woodward Iron Co., committed suicide Aug. 17, by shooting himself twice behind the right ear with a revolver, according to the coroner's verdict. The tragedy occurred at Mr. Schoonmaker's summer home, Rosebank, Locust Valley, L. I. Mr. Schoonmaker had been suffering from melancholia for sometime, and was under the care of three trained nurses. Mr. Schoonmaker was born in Pittsburgh 63 years ago and had been living in New York for many years. He was a member of the Metropolita, Midday, Piping Rock, Garden City, Nassau Country and National Golf Links Clubs.

N. Bruce MacKelvie, president of the Butte & Superior Mining Co., suffered a stroke of apoplexy while bathing at his estate at Sands Point, L. I., Aug. 17, and drowned. Mr. MacKelvie was a member of the firm of Hayden, Stone & Co., a director in the Wright-Martin Aircraft Corp., and was interested in several other corporations. He was 39 years old.

Ensign Donald C. Pero, aged 22 years, nephew of J. P. Pero, president of the Missouri Malleable Iron Co., East St. Louis, Ill., met his death in a hydroplane accident Aug. 26. He was a graduate of the Massachusetts Institute of Technology and was son of George F. Pero, foreman of the foundry of the Chapman Valve Mfg. Co., Indian Orchard, Mass.

Julius M. Foote, head of the Strieby & Foote Co., Newark, N. J., manufacturer of drop forgings, died Aug. 25 in Los Angeles, Cal., where he went last spring for his health. Mr. Foote was 75 years of age and a member of the G. A. R.

Abram Hollman, assistant sales manager of the Phoenix Iron Works, Phoenixville, Pa., died suddenly at Philadelphia, Aug. 13, age 40 years. He was on a trip from Philadelphia to New York, when he was overtaken by an attack of acute indigestion in the Reading terminal in Philadelphia, and died in a hospital.

Steel Production Hinges on Coal

Frank Expressions at Conference of Government and Steel Company Officials Clears Air and Promises to Bring About More Effective Co-operation—By-Product Fuel Short—Wire Mills to Switch to Shell Steel

WASHINGTON, Aug. 27.—Formal acknowledgment by the government that maintenance of steel production depends largely upon fuel, labor and transportation was made to the industry last week in a special meeting of the war industries board and other government officials with representatives of the American Iron and Steel institute. The acknowledgment was collective, coming in individual expression from heads of the various branches represented at the conference. Steps are expected to be taken soon by which much of the basic troubles in the industry will be eliminated in favor of a steady output of iron and steel.

Expressions from both steel men and government authorities indicate the meeting was harmonious, frank, and from the standpoint of merging views, one of the most successful yet held. The steel men left with the feeling that the government finally realizes the basic factors of the steel problem must have immediate and remedial attention if the present rate of production is to be maintained. On the other hand, the government leaders felt the manufacturers were more fully conversant with the war requirements and that the present speed in production warrants all the assistance possible.

Replogle Visits the Mills

J. Leonard Replogle, steel director, and James B. Bonner, vice chairman of the American Iron and Steel institute subcommittee on steel distribution, personally visited several mills in the Pittsburgh district earlier in the week and from Pittsburgh Mr. Replogle wired Chairman Baruch of the war industries board to have representatives of the fuel, railroad and labor administrations on hand to meet the steel manufacturers when they conferred with the board on Thursday. At first hand acquaintance Mr. Replogle became more familiar with the actual conditions at the mills, furnaces and ovens and the telegram to his chief indicated the government is centralizing attention on the primary elements.

As a result of the telegram, Fuel Administrator Garfield, Carl R. Gray of the railroad administration, and Felix Frankfurter, chairman of the war labor policies board, were present when the manufacturers and the board took up the questions for which the meeting had been called. Under the leadership of James A. Farrell, president of the United States Steel Corp., and vice chairman of the general committee of the institute, the manufacturers made clear to the government that steel production in the past week or two has been at a tremendous rate and that barring weather, the human element and the supply of raw materials, the pace could be maintained.

Admit Lack of Coal

This frank statement by the industry was met with frankness by the government. Dr. Garfield admitted the coal now being mined and the coke being produced were not up to standard. Mr. Gray, director of operations for the railroad administration, admitted the carriers had not provided the facilities for moving coal and coke. Mr. Frankfurter admitted the shortage of labor. The man power problem, interlinking all the questions, and the possibilities of the draft, exemptions, etc., were discussed. Hugh Frayne, labor representative in the war industries board, and W. S. Blauvelt, Dr. Garfield's coke director, took part in the discussions.

The fuel question for the industry centered mainly in the matter of coke. W. H. Clingerman, president of the H. C. Frick Coke Co., attended the conference and spoke on the subject. While the shortage of by-product coke is alarming, the question of coke for beehive ovens also was gone over. More than 2000 of the Frick beehive ovens have been banked in order that the coal might be diverted to the by-product ovens at Clairton, which, when completed, will be the largest plant in the world. The fuel and industries administrations are particularly anxious to get the beehive ovens in full operation again.

Statement of requirements by Steel Director Replogle, which now aggregate close to 23,000,000 tons, based on estimates for the last half of 1918, while including considerable commercial tonnage regarded as essential in the conduct of the war, was to impress the steel representatives with the seriousness of the situation. The projectile steel and rail steel requirements are so large that it is planned to have mills divert projectile equipment to the production of rails while bar and wire rod mills are to go on to the rolling of shell steel. This highly important feature of the meeting resulted from the visit of Mr. Replogle and Mr. Bonner to the mills in western Pennsylvania.

This decision indicates a lowering production in wire rods and bars with resulting shortages in commercial consumption. The increased rail and projectile production, however, will greatly contribute to the winning of the war and that after all is the main problem. Automobile men again have been seeking steel supplies despite the board's warning to conversion to war work by the first of the year, but the sentiment of the meeting last Friday is that less and less steel will be available for commercial consumption.

Board's Announcement

In addition to Mr. Farrell, Mr. Clingerman and Mr. Bonner, attendants at the meeting included A. C. Dinkey, president of the Midvale Steel & Ordnance Co., John A. Topping, chairman of the Republic Iron & Steel Co., and Eugene G. Grace, president of the Bethlehem Steel Corp. The war industries board, through the committee on public information, made this announcement of the meeting:

At a meeting of the war industries board presided over by Bernard M. Baruch, the chairman, and attended by Dr. Harry A. Garfield, the fuel administrator; Carl Gray, representing the railroad administration; Felix Frankfurter, representing the department of labor, the war service committee of the Iron and Steel institute and other steel manufacturers and government officials, the whole question of the government's steel requirements was taken under review today, with a view to meeting every ounce of the actual demand, if that be possible.

The steel manufacturers were under the presidency of James A. Farrell, of the United States Steel Corp., and included E. G. Grace, of the Bethlehem Steel Corp.; A. C. Dinkey, of the Midvale Steel & Ordnance Co.; John A. Topping, of the Republic Iron & Steel Co., and others.

The largest of the government's steel requirements is that of the railroads; next that of ship builders; third the war department and fourth the navy. The question of supplying these demands in such fashion that there need be no curtailment of the actual war requirement for steel was

put squarely before the manufacturers and all others concerned in any way with steel production. To accomplish this it was decided there must be:

First: Greater conversion of mills to the production of steel that is required in the war program.

Second: An increase in the coal supply, particularly by-products coal, available for mills engaged on government work.

Third: Shutting off further steel shipments to industries other than those engaged in meeting war needs.

Fourth: More rigorous conservation in the handling of steel in the mills.

The steel men in the meeting promised to co-operate to their utmost in meeting the government's steel requirements and virtually pledged themselves to so increase their output as to guarantee the needs of the war program.

Storing of Coal Limited by Government

WASHINGTON, Aug. 28.—One measure resulting directly from the tremendous increase in the demand for coal for special war purposes in the eastern part of the country, particularly for the navy, is the limitation placed by the fuel administration on the amount of bituminous coal industrial plants will be allowed to accumulate in storage. At a meeting of all the state fuel administrators east of the Mississippi river and also the states of Minnesota, North Dakota and South Dakota in Washington Aug. 22, Fuel Administrator Garfield announced the basic policy of the fuel administration as to coal shortage as follows:

Coal in excess of that required for current operations shall be delivered to plants not on the preference list of the war industries board only when it is not in demand for use before April 1, 1919, by consumers on said list, namely, railroads, the federal government, states, counties, public utilities, retail dealers and manufacturing plants. In carrying out this policy allowance shall be made for differences in distance from the mines and for differences in transportation conditions which may require more or less storage at the beginning of winter to insure uninterrupted operation until the following spring.

Acting on Dr. Garfield's suggestion, the conference then adopted a report fixing the maximum limits for coal storage as set forth in the accompanying table. In explanation, the report continues:

It is understood that these limits are mandatory and each fuel administrator is expected to see that the different classes of consumers are not allowed to exceed these limits. At the same time it is understood that particular cases may require special treatment by a state fuel administrator, either by way of granting more stocks of coal than are indicated by these limits, or by restricting them to a less supply.

Where a state administrator decides the maximum limit should be exceeded in a special case for some special reason he shall have authority to grant a revocable increase in writing for a specific added number of days. The administrator shall report each such specific case in writing immediately to the United States fuel administration at Washington which may in writing disapprove the extension granted by him.

Any company or concern which is permitted under the zoning regulations now or hereafter in force to obtain coal from Illinois, Indiana, western Kentucky or from mines west of the Mississippi river may retain such reserve stock of coal as it shall have on the effective date hereof, on condition that such company or concern shall thereafter use screenings or mine run only for its current necessities, and shall obtain such screenings or mine run for current use only from such last mentioned fields.

Maximum Days for Coal Storage

	STEAM COAL			BY PRODUCT AND GAS COAL		
	Public utilities	Preferred industries	Non-preferred industries	By-product and gas plants	Preferred industries	Non-preferred industries
Maine	120	90	30	120	90	0
Massachusetts, Vermont, New Hampshire, northern New York	90	60	30	90	60	0
Connecticut, Rhode Island	75	45	20	75	45	0
Southern New York, New Jersey, Delaware, eastern Pennsylvania	30	30	15	45	30	0
Maryland, District of Columbia, Virginia, North Carolina, South Carolina, Georgia, Florida, western Ohio	30	30	15	45	30	0
Western Pennsylvania, West Virginia, eastern Kentucky, east'n Ohio	30	20	15	45	30	0
Lower Michigan	90	45	20	60	60	0
Illinois, Indiana, Missouri	..	..	..	60	60	0
Wisconsin, Minnesota, North Dakota, South Dakota, upper Michigan	..	..	.	90	90	0

Williams Holds Up Standard Rail Price

WASHINGTON, Aug. 27.—Final action on establishing maximum prices for standard steel rails was deferred last week on request of the railroad administration. The rail price question was taken up by the price fixing committee of the war industries board with special committees of the board and the industry and it was practically agreed $57 for open hearth steel rails and $55 for bessemer would be accepted, but H. P. Spencer, representing the railroad administration in the board's special committee, said John Skelton Williams, purchasing agent for the administration, was not ready to act.

The price fixing meeting followed the general steel conference. While it was reported no formal action was suggested, it was practically assured that the government was ready to accept the prices which the trade has long expected would be established. Weeks have passed, first because of waiting additional reports on rail costs from the federal trade commission, and then for all branches of the government to study the question, while the price has hung fire. And at the last moment, when it was believed everyone was ready, the purchasing department of the railroad administration asked for more time.

At the war industries board it was

suggested another meeting on the rail prices may be called this week, but it is evident Mr. Williams will have to be ready before the conference is called. The navy department, represented by Lieut. Com. S. R. Fuller, Jr., and the army, by Maj. W. L. McCleary, both interested in the rail prices, apparently have been ready for some time. J. Leonard Replogle, steel director, as chairman, and Mr. Spencer constitute the remainder of the committee. James A. Farrell, John A. Topping, E. A. S. Clarke, E. G. Grace, and A. C. Dinkey constitute the American Iron and Steel institute's special committee and all except Mr. Clarke attended. James B. Bonner, vice chairman of the institute's subcommittee on steel distribution, also was present.

One of the most important matters affecting rail production, which was taken up at the general steel conference preceding the price meeting, was the decision to turn back into rail production some of the mills now rolling projectile bars. This is necessary because of increased demands, particularly from overseas, for more rails. What extra tonnage this conversion will produce has not been disclosed, but the last available figures indicated production of approximately 3,000,000 tons annually. Evidently this is not sufficient for the railways in the United States and France. Of this 3,000,000 tons, approximately 50,000 tons weekly were of open hearth steel and the remainder in bessemer.

Diversion of rail mills from projectile steel production does not indicate a lessening in the manufacture of shell bars. In fact, the contrary is true. The demand for shells has been increasing tremendously and each fresh advance of the allied forces calls for greater tonnages of projectiles. The increased shell steel production, including that which must be rolled to make up the loss in the conversion of the rail mills, is to come from bar, wire rod and pipe mills which can be adapted to the production of shell bars. Again figures are withheld, but limited production of wire, nails, bars, pipe, etc., will follow in the proportion of the facilities devoted to shell making.

The plate requirements are as essential as the rail and projectile steel demands, the war industries board points out, and new capacities which are to come in, built by the steel industry itself and without government aid or assistance, are expected to meet the growing demand for this kind of steel. Added demands for plates, shapes, projectiles and rails means diversion of steelmaking pig iron from other production which in turn means shortages in other lines. This is true not necessarily because those mills have been put on other work, but because the mills may be left idle in order to better employ the material and the men.

Won't Affect Nitrates

Washington, Aug. 27.—The production of nitrates for the government will not be affected by the recent order causing temporary suspension of water-power development at the Muscle shoals nitrate plants, according to a statement just issued by the ordnance department. The order was issued on representations by the war industries board to the effect that the erection o fthe water-power plant should be regarded as non-essential. Power was not anticipated from the plant for four or five years.

Pick Metallurgical Board for Ordnance Work

Washington, Aug. 27.—The ordnance department has appointed a board on metallurgical matters to co-ordinate the various ordnance departmental activities along this line, and also to insure the compiete co-ordination of similar activities of the various divisions of the war department and the war industries board. The personnel of the board follows: Dr. G. W. Sargent, engineering division, chairman; Lieutenant Colonel W. P. Barba, production division; Major A. E. White, inspection division, representing the ordnance department; Lieutenant Colonel F. B. Richards, of the office of the assistant secretary of war; L. L. Summers, representing the war industries board, and William H. Smith, representing manufacturers. The board will act not only for the various sections of the ordnance department but also in connection with the manufacturers working for and with the department in the production of war material. It will gather the most recent and complete information on all metallurgical products.

Electrical Engineers to Convene Sept. 11

A program replete with entertaining and instructive features has been prepared for the twelfth annual convention of the Association of Iron and Steel Electrical Engineers to be held in Baltimore, Sept. 11-14. After registration a business session will be held at 10 a. m., Sept. 11, which will include the reports of officers and committees and the election of officers.

The afternoon session will be devoted to the reading of the following papers: "Rules for Safe Operation of Electric Cranes," by the safety committee; "Methods of Education of Electrical Employes of Iron and Steel Mills," by the educational committee; "Automatic Engine Stops," by Walter Greenwood, Youngstown, safety engineer, Ohio works of the Carnegie Steel Co. Beginning at 9 a. m., Sept. 12, the following papers will be read at the morning session: "Bridge Motors for Overhead Traveling Cranes," by R. H. McLain, engineer, power and machinery engineering department, General Electric Co., Schenectady, N. Y.; "Condensers and Condenser Engineering Practice," by D. D. Pendelton, district sales manager, Wheeler Condenser & Engineering Co., Pittsburgh. The following papers will be read at the afternoon session beginning at 2 o'clock: "Standardization of Ratings of Large Rolling Mill Motors," by K. A. Pauly, electrical engineer, power and machinery department, General Electric Co., Schenectady, N. Y.; "Electrically-Driven Mills," by J. T. Sturtevant. A patriotic rally will be held at 4 p. m. and the annual banquet at 7 p. m., Sept. 12.

"Remote Controlled Substation," a paper by W. T. Snyder, superintendent, electrical department, National Tube Co., McKeesport, Pa., will be read at the morning session, Sept. 13, and the standardization committee will present its report on standardization for 1918. The afternoon will be devoted to an inspection of the furnaces, steel works and shipyards of the Bethlehem Steel Co., at Sparrows Point.

All the delegates are invited to attend a joint session of the Philadelphia sections of the A. I. & S. E. E. and A. I. E. E. and the Engineers club of Philadelphia with the electric welding committee of the Emergency Fleet corporation in Philadelphia, Sept. 16, when electric welding will be discussed.

Otto M. Eidlitz, director of the department of labor's housing bureau, has been requested to act as umpire in a controversy among members of the war labor board, involving 58 war industry plants at Bridgeport, Conn. As umpire, Mr. Eidlitz will hear each side and then cast the deciding vote. The principal point of difference is understood to be the method of classification to be established for the governing of wage rates in the respective plants.

British Soldiers Returned to Mines

Fuel Supplies So Dangerously Low Government Brings 25,000 Men Back from France to Work in Pits—Higher Prices Asked for Finished Iron and Steel—Government Buys Material for American Troops

Bureau of THE IRON TRADE REVIEW,
Prince's Chambers, Corporation St.,
Birmingham, Eng., Aug. 6.

THE question of fuel is the most important at present in all branches of the iron and steel industry in England. Furnace managers have been sending urgent appeals to the pits to send sufficient coal to keep the furnaces going through the colliery holidays. Stocks at the furnaces are getting dangerously low and a number have had to go on slack blast. The seriousness of the problem seems to have impressed itself on parliament, criticism of the coal rationing scheme for the coming winter being voiced. The government announces it is bringing back from the war 25,000 skilled miners. That is considered proof that the last withdrawal was a blunder, as everyone in the coal and iron trades knew at the time.

The coal controller has issued an appeal to the miners to be content with a one-day holiday next week and to return to the pits Tuesday, but in the Cannock district near Birmingham the employers have given the men an additional day, despairing of getting them to return Tuesday. Everybody will be pleased if the output of the pits is up to average by Wednesday.

Pig iron makers are booking substantial orders but are exercising caution in view of their large commitments and the impossibility of increasing their output. Owing to the difficulties of production part of the basic material fails to meet specifications and this material is bought up eagerly for forge purposes. More foundry iron could be used if available and as most of the forges and mills will be idle next week the furnaces are hoping to overtake arrears. Some furnaces decline to receive orders at present. Scotch pig iron is being consumed as quickly as produced and hematites are in active demand for the Scotch steel works and mills. Some curiosity still exists as to prices although it is assumed that whatever the deficiency may be it will be met by an increased subsidy. Scarcity of pig iron still stimulates the demand for scrap, especially broken machinery of all kinds.

Holidays will be unusually long next week. Hardly any establishment in the midlands will take less than a week's holiday and some will take 10 days. It appears that the ministry of munitions is not pressing for supplies, except aircraft materials. The heat has been trying, with a close steamy atmosphere prevailing. Labor is scarce and coal supplies low. Output will not be seriously hampered by a good holiday.

The question of finished iron prices was the subject of a conference in Birmingham and representatives of the trade placed their proposition for higher selling prices before the authorities in London. It is hoped a substantial advance will be granted. The change in the price of steel strip is expected to be in the downward direction. This material is coming under control and a lower price than £17 15s ($85) now paid is looked for. For other finished iron and steel it is hoped at least 10s ($2.40) will be granted. It is hoped prices on billets and other semifinished steel will also be raised as the selling rates for these have been unprofitable for some time past. Supplies have been better of late on account of increasing capacity.

The ministry of munitions has issued a new list of extras applying to small steels, and in important respects varies the present practice. The basis will still be £15 ($72). This is not particularly complained of except that rerollers and steelmakers are placed on the same footing. The reroller complains he will be worse off than the steelmaker, whose profit he helps to make when he buys the billets. The ministry, however, is not disposed to differentiate in favor of the reroller. For lots under 10 tons the seller can charge £15 10s ($74.40) and under two tons £16 10s ($79.20). For half rounds the extra will be increased from 10s ($2.40) to 20s ($4.80). For one-fourth rounds the extra will be 105s ($25.20) and for three-sixteenths rounds 145s ($34.80). The former increase for these two descriptions was 40s ($9.60) and 70s ($16.80) respectively. The increase is simply due to the fact that under war conditions the ministry of munitions discourages varieties in billets and has sought to make them of few thicknesses. The natural effect has been a great deal more rerolling for thin bars, for which the roller must be paid.

The government continues to send in large orders, especially for small angles for wire entanglements sheets for American soldiers and for aircraft material. Inquiries are being made for large commercial requirements, especially for light plates one-eighth-inch and three-sixteenth-inch in thickness, but the works cannot accept this business.

The Midland iron and steel wages board has issued their returns of sales of iron for May and June showing an average selling rate of £15 15s 2p ($75.64) a ton compared with £15 13s 7p ($75.26) for the previous two months. The rise is about evenly distributed between bars, angles and tees. The reduction in output in the two months from 30,549 tons to 27,578 tons tells its own story of difficulties connected with production.

Sheffield is becoming concerned about its steel slump in the crucible department. A year ago this branch was booming, but for various reasons the works cannot now get enough to do. Many places are only working from four to five days a week. The withdrawal of Russia from the war threw a good deal of steel on the market, while France and Italy are more self dependent than they were and hardly anything is going to Japan or America. The munitions factories also are buying much less tool steel.

In June the *London Daily Mail* offered prizes of £10,000 to encourage maximum output in shipbuilding. The idea was to give the men a strong stimulus to do their best. In view of certain technical difficulties the matter was referred to the national joint committee of shipbuilding employers and workers. The two secretaries representing both sides of the committee drew up a plan but, according to the *Daily Mail* "when the plan was submitted last week to the executive councils of the trade unions and the executive board of the employers federation it was stated that some of the men regarded with suspicion the idea of a competition as 'likely to be influenced by ulterior motives hostile to trade union interests'." As the plan would not be carried out with wholehearted energy it was recommended that it should be dropped.

Men of the Iron Trade

Personal News of a Business Character Regarding the Men of Affairs of the Industry

WILLIAM M. CORSE has resigned as general manager of the Titanium Bronze Co., Niagara Falls, N. Y. On Oct. 1 he will become affiliated with the Ohio Brass Co., Mansfield, O. Prior to his connection with the Titanium Bronze Co., Mr. Corse was prominently identified with the Lumen Bearing Co., of Buffalo, and in 1908 he was associated with the Detroit Lubricator Co., Detroit, Mich. He is a brass foundryman and metallurgical expert of unusually wide experience. He was elected secretary-treasurer of the American Institute of Metals in 1908 and president of the same society in 1917. The American Institute of Metals, with which Mr. Corse is still closely identified, is now the Metals Division of the American Institute of Mining Engineers.

P. A. Green, formerly with the Gibraltar Mfg. Co., has become associated with the Mechanical Mfg. Co., Chicago.

Harry L. Olmstead, engineer on the staff of the McKinney Steel Co., Cleveland, has been appointed to service in France as a Y. M. C. A. secretary.

R. Baylor Hickman, president of the Ewald Iron Works, Louisville, Ky., has sailed for France to engage in Red Cross work.

L. F. Miller of the Mitchell Motors Co., Racine, Wis., has joined the Anderson Forge & Machine Co., Detroit, as metallurgist.

Ephron Catlin, jr., secretary of the Southern Railway Supply & Equipment Co., St. Louis, has enlisted in the naval reserve flying corps.

George E. Scott, vice president of the American Steel Foundries, Chicago, has been elected a director of the Harris Trust Co., New York.

E. J. Kearney, secretary of the Kearney & Trecker Co., Milwaukee, and F. H. Claussen, president of the Van Brunt Mfg. Co., Horicon, Wis., have been appointed representatives of the Wisconsin state war labor board.

P. A. Greene, formerly identified with the Gibraltar Mfg. Co., has become connected with the Mechanical Mfg. Co., Chicago.

J. E. Flansburg has been appointed traffic manager of the American Manganese Steel Co., Chicago. He formerly was in the traffic department of the Chicago & Northwestern railroad.

L. S. Taylor, controller of the Pullman Co., has been appointed federal manager of the Pullman operating properties by Director General McAdoo.

W. Hume Logan, president of the Dow Wire & Iron Works, Louisville,

WILLIAM M. CORSE

has been elected a director of the Louisville board of trade.

William A. Lewis, dealer in metals and alloys, has closed his plant in Hoboken, N. J., and enlisted in the United States navy.

Martin J. Alger has been named executive assistant to A. H. Smith, regional director of the eastern region with headquarters at New York.

W. H. V. Rosing has been appointed assistant mill manager of the Globe Seamless Steel Tubes Co., Milwaukee, in charge of engineering and mechanical departments.

Arthur H. Young, director of the American Museum of Safety since Jan. 1, 1917, has resigned to take charge of the employe relations department of the International Harvester Co. R. M Little, formerly a trustee of the museum, has succeeded Mr. Young as director.

Charles Stoup, manager of the Norwalk, O., plant of the Crucible Steel Co. of America, Pittsburgh, has been elected a director of the Huron County Banking Co., Norwalk.

Patrick Gibson has been promoted from night superintendent of the Osborne Bradley Car Co., Worcester, Mass., to division superintendent of the day squad.

B. F. Jones, jr., president of the Jones & Laughlin Steel Co., Pittsburgh, has been appointed chairman of the Pittsburgh committee for the fourth Liberty loan.

Joseph H. Cheetham, formerly chief mechanical engineer of the McNab & Harlin Mfg. Co., Patterson, N. J., has been appointed superintendent of the Kunkle Valve Co., Fort Wayne, Ind.

C. H. Jones, of the employment department of the Westinghouse Electric & Mfg. Co., Pittsburgh, has been appointed special agent of the United States employment service.

Melville Myers, erection superintendent of the Snead Architectural Iron Works, Louisville, has been accepted as a candidate for the artillery officers' training camp, Camp Taylor.

Ralph E. Carpenter has resigned as sales manager of the Taft-Pierce Mfg. Co., Woonsocket, R. I., to become assistant to the president of the Aluminum Castings Co., Cleveland.

C. S. Parsons has been appointed superintendent of the Joseph Dixon Crucible Co.'s graphite mill and mine at Graphite, N. Y. He formerly was with the Mines Branch, Ottawa, Can.

C. K. Hooper, president of the Hooper-Falkenau Engineering Co., New York city, is now a major in the ordnance department in charge of the production section of the truck division.

The Chicago Pneumatic Tool Co., Chicago, has appointed C. W. Cross as special representative for the sale of pneumatic tools to railroads, to succeed L. C. Sprague, who has been promoted to the position of district manager of sales for the company at New York.

Men of the Iron Trade

Personal News of a Business Character Regarding the Men of Affairs of the Industry

WILLIS M. STERRETT of the McClintic-Marshall Co., Pittsburgh, who has been elected president of the Union Shipbuilding Co., is regarded as one of the country's foremost steel engineers. He was graduated from Lafayette college as an engineer with the class of 1888. His first professional engagement was with the Shiffler Bridge Co., Pittsburgh, and he was identified with this company until its absorption by the American Bridge Co. From 1900 to 1910 Mr. Sterrett was manager of the Pottstown, Pa., plant of the McClintic-Marshall Co., and from 1910 until its completion, he was the company's representative and had general charge of the work done by the McClintic-Marshall Co. on the Panama canal. In this latter task, Mr. Sterrett had charge of the erection of 60,000 tons of steel and had under his direction 5000 men. Since the completion of the canal work, Mr. Sterrett has been in charge of the Washington office of the McClintic-Marshall Co.

Edward J. Albert, manager of the mining and power department of the Canadian Allis-Chalmers, Ltd., has been appointed sales manager of the Thwing Instrument Co., Philadelphia.

Max McMurray, president of the Cromwell Steel Co., Cleveland, has resigned and George H. Beaumont of Pickands, Mather & Co., vice president, will act for the present as president.

Harlan B. Norton resigned recently as night superintendent of the New Departure Mfg. Co., Bristol, Conn. He intends to engage in the ice business.

Eric Svenson has been made manager of the S.K.F. Ball Bearing Co., Hartford, Conn. He formerly was a mechanical engineer in Sweden but recently came to the United States.

Maj. C. B. Wilcox, chairman of the board of directors of the Sandusky Gas & Electric Co., has been selected to direct the publicity for Erie county, O., in connection with the next Liberty loan.

Theodore H. Goodrich has become vice president and treasurer of the American Pump & Engineering Co., Hartford, Conn., having resigned as chief operator and manager of the traffic department of the Western Union Telegraph Co., Hartford, after 35 years of service.

C. B. Banch, designing engineer, formerly in the employ of the Corrigan, McKinney Co., Cleveland, now has a position in the ordnance department of the United States Steel Corp., Ambridge, Pa.

J. E. Flansburg has been made traffic manager for the American Manganese Steel Co., Chicago. He formerly was in the traffic department of the Chicago & Northwestern railroad.

L. L. Bannon, formerly superintendent of the plant of the Weatherby Foundry & Machine Co., Weatherby, Pa., has been appointed superintendent of the Bonney Vise & Tool Works, Allentown, Pa.

Hubert M. Toppin will, on Oct. 1, become affiliated with the Jacobs Mfg. Co., Hartford, Conn., maker of drill chucks. He has resigned as treasurer of the Hartford Morris Plan Co., that city.

David S. Wegg, of Salt Lake City, has been appointed supervising inspector of ordnance material in the Chicago district with headquarters at the Standard Steel Car Co.'s plant, Hammond, Ind.

B. A. Epperson, who for 10 years represented the Stark Rolling Mill Co., Canton, O., in Indiana, Illinois and the southern states, has joined the central officers training camp at Camp Gordon, Ga.

C. Edwin Clarke, formerly chief engineer of the Wilmington Steel Co., Wilmington, Del., has been appointed master mechanic of the Saucon plant of the Bethlehem Steel Co., Bethlehem, Pa.

Capt. M. L. Merrill, who formerly was district sales manager of the Hyatt Roller Bearing Co., with headquarters in Hartford, Conn., has arrived safely overseas with the ordnance detachment of the seventy-first regiment.

J. J. Shannon has resigned as general manager of the Woodward Iron Co., Birmingham, Ala. He has not been enjoying good health for some time and will go to French Lick Springs, Ind., for a rest and will then return to Birmingham where he has been connected with industrial concerns, mainly in operation departments for more than 25 years. A leave of absence has been granted R. H. Bannister, vice president of the company. He will travel for a year or more in an effort to regain his health.

R. W. Davis is now connected with the sales organization of the Cleveland Milling Machine Co., and is in charge of the Detroit territory with offices at 705 Dime Bank building, Detroit, where a large number of standard milling cutters are carried in stock. Mr. Davis has had extensive experience in this business.

E. D. Graff, formerly assistant to the vice president of Joseph T. Ryerson & Son, has resigned to enter the office of the director of steel supply, war industries board, Washington. R. J. Steyman, manager of the Ryerson Detroit plant, has removed to Chicago to take Mr. Graff's place and W. H. Besse has been transferred from Chicago to become acting manager of the Detroit plant.

Henry Stroh and Merle G. Peterson recently joined the sales force of the Walter A. Zelnicker Supply Co., St. Louis. Mr. Peterson is to be connected with the company's Chicago office. For the past 10 years Mr. Stroh was connected with the Elliot Frog & Switch Co., prior to which time he was associated with the Republic Iron & Steel Co., both of East St. Louis. Mr. Peterson was formerly associated with the Niles-Bement-Pond Co. and Pratt & Whitney Co.

Fred W. Beach who, until a few months ago, was general manager of the La Salle Steel Corp., Chicago, has been made representative of the Betz-Pierce Co., Cleveland, in the Chicago territory. He is also acting as sales agent in that district for the Mansfield Sheet & Tin Plate Co., and the Mansfield Lock Washer Co., Mansfield, O. Prior to becoming affiliated with the La Salle Steel Corp., he was general manager of sales for the Massillon Rolling Mills Co., Massillon, O.

Labor is Encouraged to Organize

War Labor Board Outlines Program for Electing Shop Representatives to Press Demands on Employers—Assistant Secretary of Labor Asks Employes to Name Committees to Present Their Cases

TWO important developments in the labor situation recently have led to the charge being heard among manufacturers that a policy of fair play for the worker, adopted by the government at the outset of the war, has been distorted by various government agencies into one of favoritism for labor. Emphasis is being placed by these agencies on President Wilson's words to the effect that workers have the right to organize and bargain collectively, while the qualifying point made by the President that organized labor shall not disorganize war industry or use the present abnormal situation as a club to hold up employers, in other words, that labor shall not profiteer, is being lost sight of, or deliberately ignored.

This is the interpretation placed by manufacturers on the decision of the national war labor board in the Smith & Wesson Co.'s controversy with its employes. The board did not attempt to dispute the fairness of wages or hours of employment in this case, leaving that issue for representatives of the unions and the company to settle, but it did give the union a big stick to go after their employers when it held that the company had no right to make personal contracts, whether or not those contracts were legal. It held the company was not justified in discharging employes, who were notorious disturbers, and ordered their reinstatement and payment for the time they were laid off.

The most significant feature of its decision, however, was the suggestion that the workers elect representatives to deal with the company in the settlement of wage disputes, which seemingly is a direct invitation to them to organize and to force their point.

The report states that the board's examiner will select the place for the meeting of the workers and that the examiner shall preside at the election for the choosing of their shop representatives. The report contains this paragraph to govern the procedure of the workers' representatives:

"The department committee shall meet annually and shall select from among their number three employes who shall be known as the committee on appeals. This committee shall meet with the management for the purpose of adjusting disputes which the department committee have failed to adjust." This, say the manufacturers interested in the case, amounts to nothing more or less than the war labor board organizing labor to deal with the employers.

Another incident in line with this attitude of the government toward employers and labor is the circular request issued by the assistant secretary that employes of various plants name committees to represent them in meeting representatives of the department when they call. Ostensibly this move could be justified on the ground that it is the department's purpose to be informed of labor troubles before the men strike and thus delay war work, but the practical result of it, the manufacturers declare, is to encourage employes to profiteer and to use the government agencies as a club.

How Labor "Wins" With Government Aid

ONE of the most important decisions handed down by the national war labor board, as clearly defining the attitude of the board toward employers, was that given in the controversy between the Smith & Wesson Co., Springfield, Mass., manufacturers of arms for the government, and its employes.

Labor unions in Springfield celebrated the decision as a great victory while Frank P. Walsh, labor's representative on the board, in Washington, was quoted in an interview as denouncing the company for "a flagrant violation of the principles of the board." Former President Taft did not participate in the proceedings as a member of the board, his place being delegated to Frederick N. Judson, St. Louis.

The board did not decide the question of wages, referring this question back to the unions and the company for settlement through mediation by representatives and offering to take up this phase of the dispute providing the representatives could not reach a decision.

"The board did not take up the specific grievances of the employes as to wages and conditions of employes because they were held too onerous and exhausting and for the reason that such questions can be adjusted by the employes and the management," said Mr. Walsh.

On all the other points the decision was said to favor the employes. Its acceptance by the company is not mandatory. The situation involves principles which might properly be made the subject for review by the courts.

The board held that "the practice of the company in times past to make restrictive personal contracts, even if lawful when made, is contrary to the principles of the national war labor board, and the practice of making such contracts should be discontinued for the period of the war."

The board then quoted President Wilson's statement relative to the rights of labor to bargain collectively and even outlined a program providing the means for the employes to do so. It held that certain employes had been discharged contrary to the principles laid down by the

President and recommended that they be restored to their former positions and paid for all time lost by them on account of their discharge.

The board concluded with the suggestion that "representatives to present grievances and mediate with the company should be elected by the employes in a convenient public building in the neighborhood of the plant," which was interpreted as a clear-cut invitation to the employes to press their case.

The foundry situation in the Boston district has assumed a more settled state since a conference between employes and their employers. The men demanded an eight-hour day with an increase in wages. The companies interested refused to grant the former demand but increased wages to $5.80 a day for nine hours. Although a certain degree of restlessness prevails among the men there have been no strikes during the past two weeks.

The agreement which the Savage Arms Corp., Utica, N. Y., signed with the International Association of Machinists a year ago expired Aug. 12 and while there has been considerable talk no definite proposition for changing working conditions has been submitted to the corporation. Reports that the men will ask for $1 and $1.50 an hour have been circulated, but it is assumed the men are awaiting to see what award will be made by the labor board in the Bridgeport, Conn., strike situation.

* * *

IN the Milwaukee district between 500 and 600 employes of the Power & Mining Machinery Co., Cudahy, Wis., struck for higher wages, using as a pretext the claim that a labor orator, speaking in behalf of the government, had told them they would be traitors, Huns, pro-Germans and slackers if they quit work. The fact that the speaker denied using such language, insisting that he pleaded only for continuous, patriotic effort, pending a settlement of the difficulties, did not count in the union's calculations. The men first made their demands in June, but acceded to the company's request to await arbitration by government labor representatives. Meanwhile, the company put in effect a basic eight-hour day without reducing the actual number of working hours, it being engaged in filling government contracts. The new order resulted in a wage increase of about 5 per cent, which was not satisfactory to the men, who demanded 72 cents an hour for machinists, 65 cents for helpers and 46 cents for laborers.

Pending arbitration of their demands by Irving Pond, Great Lakes regional representative of the Emergency Fleet corporation's labor department, 500 employes of the Milwaukee Dry Dock Co., Milwaukee, returned to work after being out for a day and a half. They demanded a standard working schedule of 60 hours a week, better drinking water and sanitary conditions.

Organized labor in Wisconsin set up the cry that deferred classifications on industrial grounds were being used as a leverage in labor disputes, the charge being made that employers threatened to turn employes over to the draft boards if they quit work. While the employers denied making any such threats, the union's representations to the governor brought forth an official announcement stating that the state draft administration would not permit the draft in any way to become a factor in industrial disputes. This announcement appealed to the local observers much like setting up a straw man to knock him down.

* * *

FROM Cincinnati comes the suggestion that a jury of soldiers be named to decide the merits of this strike: On Aug. 16 the Weir Frog Co., Cincinnati, posted a notice in its shop announcing that thereafter the shop would be operated on an eight-hour day and 44-hour week basis, with time and a half for overtime. The change was made voluntarily, the company believing the production of material for the government would be accelerated by the basic eight-hour day rule which meant increased wages for its employes. The result was wholly unexpected. Fifteen men in the planer department immediately went out on a strike, demanding an increase of 20 per cent in wages. They were receiving from 50 to 68 cents an hour.

Striking puddlers in the Mahoning valley district have returned to work pending disposition of their case by the war labor board. They announced that they resumed work "from patriotic motives," when as a matter of fact they tied up one plant for considerable time, resulting in a heavy loss of war material, to force their issue for a closed shop. The Mahoning valley molders have presented their demands for a basic 8-hour day and the case has been referred to the war labor board.

The New Standard Hardware Works, Inc., Mount Joy, Pa., is installing a plant for the hot tinning of steel stampings for the Buhl Stamping Co., Detroit. Another installation, including unit system and process, has been contracted for by the National Enameling & Stamping Co. for installation at its Milwaukee plant. This is a hot tinning unit for tinning steel stampings.

Living Cost

Increased 50 to 55 Per Cent Since 1914, Conference Board Reports

Living expenses of the average American family were from 50 to 55 per cent higher in June 1918 than at the outbreak of the war in July, 1914, according to a report just issued by the national industrial conference board, based on extensive surveys made by various government bureaus. Food increased 62 per cent; rent, 15 per cent; clothing, 77 per cent; fuel and light, 45 per cent and sundries 50 per cent. Increases in rent fluctuated widely in various localities, in some reaching 100 per cent, and the board recommends that this factor be considered in computing the average increase in living expenses if it is to be made the basis of adjustment of wages.

Expenditures for food were considered to represent 43 per cent of the average family's outlay; rent, 18 per cent; clothing 13 per cent; fuel and light 6 per cent and sundries 20 per cent. Applying the board's percentages of increase for the respective items to this distribution of the budget the average increase is 52 per cent.

In a survey of food prices it was found that 15 leading articles increased 62 per cent and exceptional advances were made in flour, lard and corn meal. The most sensational advance occurred in the price of potatoes which in the spring of 1917 were quoted at more than three times the 1914 price. In 1918, however, the greater part of this advance had been eliminated.

Retail prices of clothing increased from 50.5 per cent for women's dollar blouses up to 161 per cent for men's overalls. The most striking increases were found in the prices of certain yard goods, many advancing 100 per cent. Women's shoes increased 88.5 per cent; men's 69 per cent.

While the board reports that 15 per cent fairly represents the average increase in rents in New York, Chicago, Philadelphia, Boston and St. Louis the increase in Bridgeport and Waterbury, Conn., Quincy, Mass., and Cleveland averaged 60 per cent and in some industrial centers was as high as 100 per cent.

The advance of 50 per cent in the cost of sundries was set arbitrarily after it was found that the advance in the cost of the other items averaged 52 per cent. For several of the principal expenses included under sundries, such as carfare, insurance, theater tickets and tobacco it is admitted that the increase in cost has been less than 50 per cent.

Iron and Steel Financial News

Up-to-the-Minute Fact and Comment Collected and Sifted For Busy Readers

War Tax Bill Being Put in Final Shape

HAVING finally reached a tentative agreement regarding the new profits tax section, the house ways and means committee took a short recess last Thursday, to give Chairman Kitchin and his experts a chance to write out the text of this part of the new $8,000,000,000 revenue bill. It was expected the committee would have the bill ready to report to the house by Wednesday of this week. Under the new profits section it is estimated that between $2,750,000,000 and $3,000,000,000, will be raised, entirely from corporate enterprises, all individuals and partnerships having been exempted from the operations of the profits taxes.

The honors seem to have fallen largely to the secretary of treasury in his controversy with committee over the framing of the new profits tax section. Mr. McAdoo insisted on framing the section so that the corporation shall pay the tax which is the larger, either on the excess profit plan, as now exists, or the war profits plan. He did not want the present excess profits schedules increased but urged an alternative of 80 per cent of the excess over prewar profits. Mr. Kitchin finally agreed to the alternative plan, but held to his plan of increasing present excess profits rates. The exact increase was not determined up to last week's recess, but it was decided the corporations would be allowed a deduction of $3000 and a minimum deduction of 8 per cent as that average percentage of profits earned in the prewar period. Mr. Kitchin favored an excess profits schedule which would tax 40 per cent profits between 8 and 20 per cent on invested capital, and 70 per cent on all profits above 20 per cent. The alternative provision agreed to by the committee was a tax of 80 per cent on war profits, a deduction of 10 per cent on invested capital being allowed. A corporation which has been enlarged since the war would pay the 80 per cent tax on all profits in excess of the prewar deductions; these deductions would equal the average net income for the prewar period plus a 10 per cent allowance on all new capital put into the business since the war.

Provide For Watered Stock

In order to provide against the possibility of some corporations escaping taxation because of their watered stock, the committee agreed upon a "catch" clause. Examination of the returns disclosed that 95 per cent of the corporations whose net incomes were between 50 and 60 per cent are corporations whose invested capital is $50,000 or less. It was determined, therefore, that if a corporation shows a net earning of less than 10 per cent it would be taxed 10 per cent on its profits notwithstanding, providing its invested capital was $1,000,000 or more. This clause was said to be intended to catch all "swollen" corporations. Two other provisions were determined upon whereby the tax on corporations of smaller invested capital would be limited arbitrarily. The committee was informed that the profits of 100 per cent are being earned by corporations of small capital stock which was closely held. It was decided, therefore, that where the invested capital is not in excess of $25,000, the limit of profits tax shall be 35 per cent; where the invested capital is between $25,000 and $50,000, the tax shall not exceed 40 per cent.

Chairman Kitchin last week complained as to the positions of the committee and the treasury department on the proposed alternative method, saying:

As I understand it, and I believe the committee so understands, there is no difference between the department and this committee with respect to the alternative methods, that is, an excess profits method and a war profits tax method, to be computed on the method that would yield the higher tax.

The committee tentatively decided upon this a week or ten days before the receipt of Mr. McAdoo's telegram to me insisting on such an alternative method. But the difference between the department and the committee seems to be this: The department, with the exception of the provision as to the general prewar percentage, in which the option is given the corporation, insists that the deduction in the war profits method shall be the average net profits made in the three prewar years 1911, 1912 and 1913, and 5 per cent excess profits method be the same as in the existing law, that is, that the rates shall not be increased. I understand that is the department's position. By the department's position 90 per cent of the corporations would be taxed by the war profits method, which inevitably increases the taxes of such corporations over the taxes in existing law from 50 to in many cases 200 and 300 per cent, and 10 per cent of the corporations would be taxed by the excess profits method, and if the rates are not raised these corporations will not have their profits taxes raised or increased a penny to help raise the required $8,000,000,000, but will pay the same amount of taxes as they are now paying.

The committee's position is to have the alternative methods, the tax to be computed by whichever method would yield the higher tax, but that the tax relation between the two methods should be so adjusted that there would not be such an inequality and discrimination against corporations falling into the war profits method; and that such corporation, paying under the war profits method, if they were making in the prewar period less than say 10 per cent on invested capital, should have their deduction raised to a reasonable per cent, say 10 per cent on their invested capital, and that the excess profits rates should be raised over those in the existing law, so that the few corporations, the lucky ones, those that were remarkably successful before the war and equally successful during the war, making substantially the same before as during the war, should pay an increased tax to help win the war as well as the other corporations not so lucky in 1911, 1912 and 1913.

The committee contends that the department's plan would show too much discrimination against the corporations taxed under the war profits method, and too much advantage to those taxed under the excess profits method. It contends that there should

be an equalization of tax payments by the two groups of corporations nearer than the department's proposition will admit; that is, too great a tax burden is thrown upon one group and not enough on the other group.

Among the thousands of lucky, fortunate corporations that will fall into the excess profits tax method and, if the rates remain as they are now, as the department insists, will pay no increase of profit taxes, are the Ford Motor Co., Eastman Kodak Co., National Cash Register Co., National Biscuit Co., Standard Oil Co. of Indiana, the Standard Oil Co. of Kansas, United Cigar Stores of America, American Tobacco Co., Liggett & Meyers Tobacco Co., First National Bank of New York, and numerous other such corporations. The committee thinks and contends that such corporations should have their profits taxes increased along with other corporations and, therefore, insists that the excess profits rates be increased over existing rates. In a nutshell, the difference between the department and the committee, is on the question of an increase or no increase in the excess profits rates, and on the question of deduction for the prewar profits method.

Foreign Corporations Are Hit by Ruling

Milwaukee, Wis., Aug. 24.—Foreign corporations with nonpar value stock cannot be licensed to do business in Wisconsin, according to a recent opinion of the attorney general of Wisconsin. The opinion is of far-reaching effect, as more than a score of large corporations will either be compelled to close their Wisconsin plants or re-incorporate under the laws of Wisconsin and place a fixed value on their shares.

Several large corporations originally organized in Wisconsin have reorganized in recent years under the laws of Maine or Delaware and largely increased their capitalization, but placed no definite par value on shares. All of these are affected.

A partial list of corporations with main works in Wisconsin, but chartered in other states and doing business as foreign corporations in this state includes the following: A. O. Smith Corp., Milwaukee; Nash Motors Co., Kenosha; Lipman Refrigerator & Car Co., Beloit; Milwaukee Electric Crane & Mfg. Co., Milwaukee; Globe Shipbuilding Co., Superior; Allamer Truck Co., Chicago; Certainteed Products Co., Milwaukee; National Aniline & Chemical Co., New York; Badger Mfg. Corp., Milwaukee; Husford Nitrogen Co., Minneapolis; Prest-O-Lite Co., Milwaukee.

Before any drastic steps are taken in the matter the opinion of the attorney general will be printed as a brief and submitted to the companies affected. Their counsel will be asked to submit briefs to a general hearing to be held in Madison within a few days.

Hints Given by Exporters for Increasing Trade

Looking towards the exploitation of foreign trade, the W. J. Crouch Co., Inc., 68 William street, New York, exporters of steel and steel products, opened up a correspondence with United States consular agents abroad. Opinions and suggestions for widening the market for American steel products were invited. Responses were gratifying, but perhaps the most valuable contribution came from Thomas D. Davis, our consul in Grenoble, France. His remarks, which show a sound knowledge of the subject, apply to all countries.

The letter follows: Your observations in regard to future methods of doing business are interesting. Frequently I have called to my attention by Frenchmen who have dealings with American firms the indifferent attitude of our exporters toward the French manner of doing business. Our firms insist on the right to change prices after orders have been given and accepted, to quote prices f.o.b. New York, to require a credit established at a New York bank, and to consider every order as a separate transaction.

While I have great admiration for the resourcefulness of American merchants, I must in the interests of truth say that the English are handling the matter much more successfully in this consular district than our own exporters. They have the advantage of being nearer, with certain tariff favors, but their success principally lies in their disposition to treat with the Frenchman in the French way. The English merchant uses the metric system in quoting prices, his prices are given in francs at the railway station of the purchaser. In addition English merchants seek to establish business relations of a permanent and intimate character. Credit facilities are afforded, and mutual trust and confidence are usually built up. Some of our American business men have treated rudely old established and solid firms of this district in the matter of carrying out the formality of payment, although these firms asked no better than to pay cash for their goods.

I have given expression to these observations not because I am disposed to quarrel with our exporters, but to impress as much as possible upon you the truth you state in your letter, that holding the export business gained at a time when America is the only supply house will be dependent upon how much attention is given to treating with the French in accordance with French business customs.

The Hardie-Tynes Mfg. Co., which operates one of the largest machine shops and foundries in the Birmingham district, has raised the wages of its employes 10 per cent.

Hard to Buy

Most Coal-Tar Products—Toluol Supply Short—Selling Naphthalin

New York, Aug. 24.—Sales of naphthalin are being made for the first time in many months. Producers have caught up on their contracts and are disposing of occasional spot carloads at 9 to 9.25c per pound.

Sales of sulphate of ammonia continue to be made temporarily to the fertilizer trade, due to the inability of government nitrating plants to absorb the entire output. This business, which is of a limited character, is being entered at $4.50 to $4.75 per 100 pounds, tidewater. Chemical users are paying around $5.65 to $5.75 for comparatively small quantities.

Numerous benzol consumers are anxious to buy at 22 to 27 cents per gallon but producers in general refuse to sell at this level. Most of the current phenol inquiries are from abroad. Owing to the difficulty of securing export licenses, very little of this business is being consummated. The market continues at 43 to 47 cents per pound.

Numerous new by-product coke oven plants recentlyl authorized will increase materially the production of coal tar by-products but it will be some months before this increase will become apparent. Toluol at present is scarcest and an increase in its production is urgently required. It is doubtful, however, whether commercial consumers will be able to get all that they need for essential purposes, even when these extensions are available, since the government also needs a lot more toluol than it is getting.

Coke Oven By-Products

Spot	
Per Gallon at Producers Plant	
Pure benzol	$0.22 to .27
Toluol (on sales sanctioned by government) (tank cars)	1.50
Toluol (on sales sanctioned by government) drums	1.55
Toluol (for government)	1.50
Solvent naphtha	.20 to .25
Per Pound at Producers Plant	
Phenol	$0.43 to .47
Naphthalin (nominal)	.09 to .095
Per 100 Pounds at Seaboard	
Sulphate of ammonia (to fertilizer trade)	$4.50 to 4.75
Contract	
Pure benzol	nominal
Toluol	no market
Solvent naphtha	nominal
Per Pound at Producers Plant	
Phenol	nominal
Per 100 Pounds at Seaboard	
Sulphate of ammonia (for commercial use)	no market
Sulphate of ammonia (for government)	$4.50

Crane Orders Take Center of Stage

Government's Order for 600 Locomotive Cranes Will Absorb Builders' Output Until March, 1919—Machine Tool Market Dull in the East and West—Large Orders for Equipment for Neville Island Ordnance Plant Placed

FOUR avenues only for the disposal of locomotive cranes now are left to builders of that class of equipment. The government has ordered 600 of these cranes to meet the requirements of the Emergency Fleet corporation, the railroads, and the war and navy departments. This order takes the entire output of all builders for the next six months. In all probability, manufacturers of less essential material will find themselves crippled due to their inability to obtain such equipment inside of several months. Heavy buying of electric cranes by the government is anticipated in many quarters, for use both at home and abroad. Other crane business placed recently includes orders from the Newport News Shipbuilding & Drydock Co., and the Bethlehem Shipbuilding Corp. for Alameda, Cal. The largest drydock and repair plant in the south is to be built by the Emergency Fleet corporation at New Orleans. It will cost $1,250,000 and equipment for it is desired. The Pennsylvania railroad is receiving bids at Philadelphia on its crane requirements and for its marine boiler plant near Perth Amboy, N. J., the Barber Asphalt Paving Co., Buffalo, desires cranes as well as machine tools. The Air Nitrates Co., New York, which recently added 50 acres to its Toledo, O., holdings, is expected to close shortly on its crane list.

While the machine tool market is reported dull in the east and west, in the Cleveland territory it is brisk. The General Electric Co., Schenectady, N. Y., desires about 30 lathes, shapers, etc., and the Locomobile Co., of America, is reserving a large number of tools which it will require in the manufacture of motors for tractors. In addition to orders for $5,000,000 worth of power plant equipment including turbo-generators, the United States Steel Corp., sent an order to a Cleveland dealer for 10 special gun boring lathes, which order aggregates $3,000,000. These are for the Neville Island ordnance plant and additional orders are anticipated in the near future. Another large inquiry has found its way into the Cleveland market from Henry Ford & Son for complete equipment for their Hamilton, O., tractor plant. While many automobile companies are confronted with the necessity of converting their plants for war work, the government's recent ruling has caused little excitement in the Cleveland district, since many were already on a war basis. The chief item of importance from Chicago, is an inquiry for 35 turret lathes wanted by a Chicago manufacturer. The usual August dullness characterizes the market there. A few orders are being placed, however, and deliveries inside of from three to six months are promised.

Government Orders 600 Locomotive Cranes

WHAT amounts to practically a blanket order for the entire output of the locomotive crane industry over the next six months has been given by the government. Through the crane section of the war industries board approximately 600 locomotive cranes have been allotted in an effort to meet the requirements of the Emergency Fleet corporation, the division of military railways, and the navy and war departments. This allotment is by far the largest ever made, and follows a meeting of builders with the war industries board in Washington a couple of weeks ago. In handling this huge order, it is said, manufacturers will find it necessary to turn over to the government, virtually, their entire production from now until March 1, 1919.

As a result of this development, interests engaged in the lesser essential work will find it practically out of the question to obtain anything like relatively early deliveries for several months to come. Some companies are refusing to consider business at this time which does not carry at least an A-5 priority certificate; and even then the final acceptance of the order in all probability, would be left to the decision of the crane section in Washington. As is commonly known, builders of locomotive cranes for months past, have been relieved of much responsibility in the acceptance of new business, as a result of the close supervision exercised by the government. The placing of this business is interpreted by many as presaging heavy government buying of electric cranes in the near future. In fact, rumors of an early requisition of a large number of overhead cranes for shipment to France have been current in the trade for several weeks.

At present, trading in the eastern crane market is relatively quiet. With the exception of the list of the United States Steel Corp., upon which action is expected to be taken very shortly, nothing in the way of big lists is pending. During the past week, the Bethlehem Shipbuilding Corp. purchased three 30-ton hammerhead cranes for its Alameda plant from Heyl & Patterson, and three 5-ton overhead cranes from the Shepard Electric Crane & Hoist Co., Montour Falls, N. Y. These latter cranes were not included in the original inquiry, which, incidentally, has since been reduced. At present, the Bethlehem Shipbuilding Corp. is in the market for three 15-ton cranes, one of 100-foot span and two of 50-foot span.

The American Radiator Co., Bayonne, N. J., has placed seven 7½-ton electric cranes with the Whiting Foundry Equipment Co., Harvey, Ill., and the Champion Engineering Co., and is now in the market for 15-ton overhead crane. The Wilputte Coke Oven Co., of 469 Fifth avenue, New York, is inquiring for two 10-ton handpower cranes for the Wisconsin Steel Co., South Chicago. The Pennsylvania railroad is receiving bids through its Philadelphia office on one

AGATHON

AGATHON STEELS
TRADE MARK

Alloy Steels

Are superior because they are made in a superior factory by superior methods, by the best that money can secure in brains and labor.

Agathon Alloys *must* be the best for each particular requirement. We demand it and vigorously enforce every test, every safeguard, every precaution to have it so.

"Agathon" stands for more than Steel—it represents Service.

Agathon Alloy Steels will serve ***YOUR*** *purpose best.*

AGATHON Chrome Steel
AGATHON Nickel Steels
AGATHON Chrome Nickel
AGATHON Vanadium
AGATHON Chrome Vanadium
AGATHON High Carbon
AGATHON Special Analysis

The Central Steel Co.
Massillon, Ohio

Sales Offices

Detroit Office—326-27-28 Ford Bldg. F. Walter Guibert, District Representative.

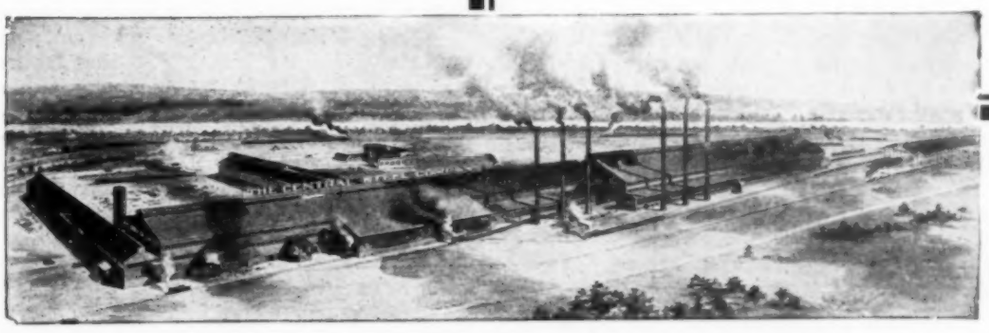
Cleveland Office—Hickox Bldg. The Hamill-Hickox Co., District Representative.

Chicago Office—1370 Peoples Gas Bldg., 122 So. Michigan Blvd. C. H. Beach, District Sales Manager.

Philadelphia Office—603 Widener Bldg. Frank Wallace, District Sales Manager.

Syracuse Office—621 University Block. T. B. Davies, District Sales Manager.

J. E. Dockendorff & Co., 20 Broad St., New York, General Export Agents.



5-ton overhead crane and three 20-ton locomotive cranes. The Standard Oil Co. of New York recently purchased two 20-ton locomotive cranes from the Industrial Works, Bay City, Mich. The Barber Asphalt Paving Co., Buffalo, which is building a marine boiler plant near Perth Amboy, N. J., is inquiring for a 70-ton stiff-legged derrick. The Federal Shipbuilding Co. is expected to close shortly on two electric cranes for its boiler shop. One will be of 75 tons capacity, 60-foot span, and the other, 20 tons capacity, 80-foot span. Another company expected to close very soon is the Air Nitrates Co. Its list is perhaps the largest now active out of New York. The Central Railroad of New Jersey is in the market for a 4-ton bucket crane. The New York Engineering Co. has purchased a 20-ton crane from the Chesapeake Iron Works. The largest order to be placed in this market of late is that of the Newport News Shipbuilding & Drydock Co., which went to the Cleveland Crane & Engineering Co., Wickliffe, O. The list, which had been somewhat reduced, involved eight cranes, four of 10 tons capacity each, three of 30 tons capacity and one of 75 tons. The Watertown arsenal is inquiring for a 10-ton overhead crane with 58-foot span and the Erie railroad wants a 5-ton gantry crane.

Relative dullness continues to prevail in the eastern machine tool market. Virtually no new large lists are out, and activity seems to be confined chiefly to a few of the larger lists pending for some time, and to small miscellaneous inquiries. The Locomobile Co. of America, Bridgeport, Conn., which is to build a plant for the manufacture of motors for caterpillar tractors, has reserved a number of the larger tools required, and is expected to place orders for the lighter equipment this week. The Mead-Morris Mfg. Co., Boston, which has been working on gun sights, has taken a $14,000,000 contract from the government for the manufacture of 4-inch gun mounts, for which some new equipment will be necessary. The Ordnance Engineering Co., New York, has bought some tool room equipment, and is understood to still be in the market. The company has a contract for the manufacture of star shells. The Barber Asphalt Paving Co. is buying equipment for its proposed boiler plant near Perth Amboy, N. J. The United States Steel Corp. and the Newport News Shipbuilding & Drydock Co. continue to negotiate on their machine tool requirements, but as yet no orders have been placed. The bulk of the requirements of the Midvale Steel & Ordnance Co. also are still pending. The General Electric Co., Schenectady, N. Y., has issued a list of about 30 machine tools, comprised chiefly of lathes and shapers. The Long Island railroad is understood to be covering on a list of 10 or 12 tools.

Deliveries on the general run of machine tools are unchanged. Universal grinders can be had within two to three months, cylindrical grinders two to four months, and plain grinders for almost immediate shipment. Engine lathes are obtainable within 30 to 90 days. Cone drive milling machines are offered for delivery in 60 days, although there are some companies sold ahead for three to four months. Radial drills and boring mills are available for November and December shipment. Upright drill presses can be had within 30 to 60 days.

Interest is being manifested in the announcement that the Emergency Fleet corporation plans to start work immediately on the construction of a $1,250,000 drydock and repair plant at New Orleans. It will be the largest in the south, and will be in operation, according to present plans, by Jan. 1. The Ramberg Iron Works Inc., Brooklyn, has completed plans for a ship repair plant, which will include a machine shop, boiler shop, forge shop and blacksmith shop. The Victor R. Browning Co., engaged in the manufacture of bases for naval guns, will build a $30,000 addition to its plant at College Point, Long Island, N. Y. Pusey & Jones, Gloucester City, N. J., will practically double its present capacity by the addition of 12 ways. The Wright-Martin Aircraft Corp. will award contracts shortly for the construction of a $400,000 addition to its plant at Long Island City. Watertown, N. Y., is having plans drawn for a $300,000 municipal electric plant.

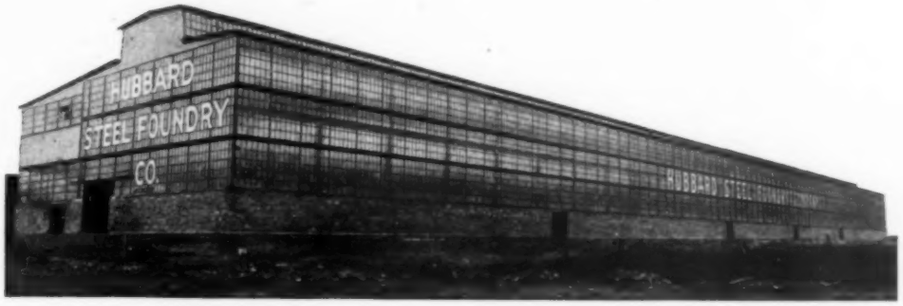
Chicago Business Consists of Small Lots

MOST machine tool dealers in the Chicago district find that business transacted in August, is somewhat less than in preceding months. The vacation season and unusual hot weather are believed to be causing at least a part of the dullness, which is probably added to by a natural lull after the long continued heavy buying earlier in the year. One noticeable fact is, that comparatively little personal buying is being done, callers at dealers' warehouses being few. An excellent inquiry comes from machine tool users however, and scattered buying is making a fair total of business for the month. Most orders at present are for delivery three to six months hence and dealers are discouraging placing of contracts for machines which cannot be delivered until late next year. The market is practically bare of inquiries for large lots and most business is being done in single tools or small lots. The only exception to this state of affairs is an inquiry now current for 35 turret lathes for a Chicago user, weighing about 8000 pounds each. No difficulty is being experienced by regular dealers over the matter of commissions under the rule that sales for government purposes must not be made through a third party. Such difficulty as has been experienced in this respect seems to be disappearing. The Chicago Bridge & Iron Works is building an addition to its temper shop. The Inland Machine Works, St. Louis, will build a plant for the manufacture of dies, jigs, and machine tools. The Central Forge Co., Detroit, will build a forge and foundry plant. The Eastern Steel Car & Foundry Co., Chicago, is building additions to its plant. The R. M. Eddy Foundry Co., Chicago, which recently bought a site for a new plant, is building a machine shop. The Manufacturers' Equipment Co., Chicago, is preparing to build a plant. The Kilbourne-Clarke Mfg. Co., Seattle, will build a machine shop and other buildings. The board of education at Detroit, will take bids soon for a heat, light and power plant for a technical school. The Michigan Central railroad will build a boiler and tank shop for locomotive repairs at Jackson, Mich. The Universal Machinery Co., Milwaukee, is building a machine shop, foundry and power plant in West Allis, Wis. The Wilson & Willard Mfg. Co., Los Angeles, will build a new plant, including a machine shop, forge and blacksmith shop.

Neville Island Business Placed in Cleveland

OF chief interest to Cleveland machine tool dealers is the fact that orders for equipment for the Neville Island ordnance plant are being placed. The United States Steel Corp., has sent an order to the Motch & Merryweather Machinery Co., for 10 special gun-boring lathes which will invoice at approximately $3,000,000. Delivery will commence in six months and it is estimated that it will require 95 steel gondola cars to transport four of these machines. Orders for power equipment including turbo-generators for this plant, aggregating $5,000,000, likewise have been placed with the Westinghouse Electric & Mfg. Co. Another item which is engaging the attention of dealers in this territory is the inquiry sent out by Henry Ford & Son, Dearborn, Mich., for the complete machine tool equipment for their new tractor plant near Hamilton, O. The American Brake Shoe & Foundry Co., is trying to locate shapers, milling machines, planers, radial drills, etc. A Dayton manufacturer wants between 15 and 20 small machine tools and is understood to have promised the order to a Cleveland seller. Dealers describe miscellaneous inquiry as being brisk, their chief problem being to find the equipment with which to

SPEEDING with ROLLING MILL JIM



Say Fellows! you remember the first of March I told you the "Hubbard" broke ground for a new foundry? Well here's a picture of her, she started with a BANG, June 3rd. Just 93 days! She has ***some*** up-to-date equipment in her, installed by ***some speed artists,*** I'll say: electric furnace, open hearth furnace and all that swell stuff. Pike her off for yourself!

So long,

Rolling Mill Jim.

Hubbard Steel Foundry Co.

EAST CHICAGO, IND.

All Kinds of Iron and Steel Rolls and Steel Castings.

fill orders. It is understood that the further placing of orders by the New York Central railroad has been held up, due to its inability to obtain motors. The American Shipbuilding Co., continues to enter the market occasionally and recently concluded the placing of orders for its major requirements. A Fosdick upright drilling machine, a 24-inch shaper and a milling machine were some of the machines ordered. To expedite its work on axles for army trucks, the Columbia Axle Co., Cleveland, recently placed orders for equipment which included three No. F 33 cutters. The Aultman & Taylor Machinery Co., Mansfield, O., wishes to obtain a punch with a 26-inch throat and capacity to punch a 4-inch hole in 16-gage steel. The Ohio Machine Tool Co., Kenton, O., desires a planer, and the Norfolk Airline railroad, Norfolk, Va., is inquiring for a bolt cutter. The Coates & Berkshire Co., Chicago, is in the market for a 12-inch B. & O. turret lathe. Used machinery inquiry has declined although some sales continue to be made and a few small inquiries are being received. The Advance Machinery Co., Van Wert, O., wants a surface grinder, while the W. F. Robertson Steel & Iron Co., Cincinnati, is in the market for a large shear with a 42-inch blade.

That Cleveland automobile manufacturers will find their chief difficulty in obtaining material to carry out the government's recommendation, is the current opinion. They are asked to take up war work by Jan. 1, 1919. This has not occasioned any great excitement in the Cleveland district, since automobile makers appear to have anticipated such a ruling and have converted their plants for the production of war material. It is understood that the Winton Co., is making tripods for Browning guns, and is experimenting with a gas engine for submarine chasers. The F. B. Stearns Co., is making Rolls-Royce motors for airplanes. The Templar Motors Corp., is making munitions, while the Grant Motor Car Corp., is producing truck trailers. It is a well known fact that the White Co., is building standard trucks which are likewise being produced by the Peerless Motor Car Co., the White truck having been adopted. Tractors are being built by the Chandler Motor Car Co., which recently placed orders for milling machines. Similar equipment is being ordered by the White Co.

If the success which has attended trial trips of the battleplane being built by the Glen L. Martin Co., Cleveland, continues to mark its efforts, this company will soon require a large number of machine tools. It contemplates the production of between six and eight of these giant planes per week. The machine is to receive government tests at Dayton in the near future after a number of trial trips are made in Cleveland.

Government Work Fills Pittsburgh Plants

MANUFACTURERS and sellers of machinery and machine tools in the Pittsburgh district are booked anywhere from two to 12 months ahead; and with almost all of this business from plants engaged on government work, there is not much room for new business. Indeed, sellers are not accepting orders unless they are accompanied by a pledge that the stock is to go into war work establishments. The manufacturers will not book the orders without such pledges, which are necessary in obtaining shipping priorities. Fairly good deliveries are being made on small and miscellaneous tools, but only long deliveries are possible in large lines. No new lists of machine tool needs have appeared recently. Demands from the railroads are sporadic and only for a small machine here and there. Changing over of the Donora plant of the American Steel & Wire Co., and some of the other wire mills for the production of more vitally essential steel products means merely a change of rolls and will call for some new equipment. Work on the government gun plant on Neville island is progressing. Evidence of this is found in the awarding of a contract to the Westinghouse Electric & Mfg. Co., Pittsburgh, for three 15,000-kilowatt generators for a generating plant to cost $5,000,000, adjacent to the ordnance plant.

New Construction and Equipment

Concise and Timely Business Building Opportunities from the Field of Industry

Among New England Factories

AUGUSTA, ME. — The Ingram Motors Corp. has been incorporated to manufacture and deal in all kinds of internal combustion engines, motors, carburetors, machinery, devises, etc., with $500,000 capital.

HAMPDEN, ME.—The Bangor Shipbuilding Corp., 39 Hammond street, is building a 1-story, 35 x 100-foot sawmill.

LACONIA, N. H. — The Chase sawmill, owned by W. G. & I. H. Chase, was damaged by fire, Aug. 17, with $40,000 loss.

BOSTON.—The John W. West Thread Co. will build a 2-story, 30 x 100-foot mill.

BOSTON. — The Pacific Carbon Products Co. has been incorporated with $250,000 capital by Philo P. Moses, William H. Dixon, Whitinsville, Mass., and John M. Schofield.

BOSTON.—The Orpin Bros., Inc., has been incorporated to make metal files, etc., with $170,000 capital by Arthur Orpin, M. Orpin, Charlestown, Mass., and B. M. Orpin.

BOSTON.—The Globe Gauge & Tool Co. has been incorporated with $24,000 capital by Charles B. Roberts, Walter W. Wright, Canton, Mass., and S. A. Andrysik.

BOSTON.—The Merriman Bros. Co., 185 Armory street, recently awarded a contract for the erection of a 1-story, 22 x 66-foot galvanizing iron foundry.

BOSTON.—The Cobb Control Mfg. Co. has been incorporated with $50,000 capital by Albert B. Cobb, Davis F. Eldridge and Appleton Williams, Newton Highlands, Mass.

BOSTON.—The Johnson-Port Co. has been incorporated to make radiators, lamps, gasoline tanks and other auto parts with $5000 capintal by Peter Glunts, Robert Port, Cambridge, Mass., and David Glunts.

BOSTON. — The Becker Milling Machine Co., builder of milling machines and cutters, is erecting a scraper plant, 56 x 66 feet. A small amount of new equipment will be purchased.

BOSTON.—The T. A. Ridder Co., Inc., has been incorporated to make heating and ventilating apparatus with $20,000 capital by Thomas F. McGrail, Thomas A. Ridder, Wollaston, Mass., and Albert Thorley.

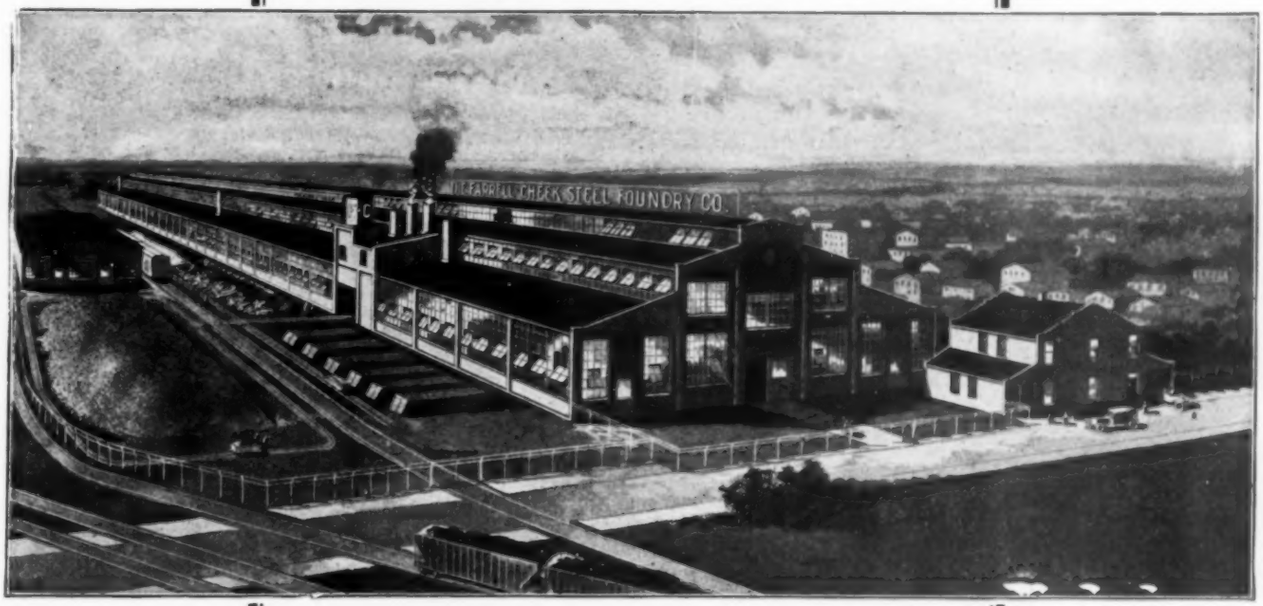
CHICOPEE, MASS.—The Excelsior Needle Co. has awarded the contract for the erection of a 4-story, 50 x 50-foot addition to its plant.

LEICESTER, MASS. — The George W. Olney Woolen Co. has let the contract for a brick, mill construction, 30 x 50-foot addition in which a drying machine will be installed.

LYNN, MASS. — The Lynn Machine & Tool Co. has been formed by Samuel Platt, Fred A. Moody and Edward Loughman.

NATICK, MASS.—The Northway Motors

FARRELL-CHEEK CASTINGS



All manufacturers who have used *"Farrell-Cheek" Steel Castings* have found several things to their advantage. The castings have always been quality castings; these castings, as integral parts of their finished product, have been worthy of all the confidence placed upon them, and, last but not least, the quality never has varied, as each lot is made up from a definite analysis, and repeat orders follow the same prescription.

Upon receipt of your specifications we shall gladly send you a *quality* quotation along with a definite delivery date. Send in specifications at once.

Farrell-Cheek Steel Foundry Co.
Sandusky, Ohio

Say you saw it in THE IRON TRADE REVIEW

Corp., recently awarded a contract for the erection of a factory, 200 x 600 feet, to be utilized for the manufacture of automobiles.

PEABODY, MASS.—The Kern Leather Co. will build a 2-story, 38.5 x 80.5-foot addition.

SOUTHBRIDGE, MASS. — The Lockhart Corundum & Lens Corp. has been incorporated with $20,000 capital by Joseph LaCroix, Myron B. Clemence and A. J. LaCroix.

SPRINGFIELD, MASS. — The Springfield Gas Light Co. will build a brick addition to its boiler house and a steel trestle to cost $17,000.

STOUGHTON, MASS.—Fire damaged three mills of the French & Ward Woolen Co. Aug. 16, causing $300,000 loss.

UXBRIDGE, MASS.—Samuel F. Scott has let the contract for a brick, mill construction, 3-story, 44 x 53-foot addition to the weave mill of the Elmdale Mill.

WORCESTER, MASS. — The Graton & Knight Mfg. Co. has let the contract for a reinforced concrete, 2-story, 56.6 x 84-foot addition to its laboratory to cost $22,000.

WORCESTER, MASS. — The Rockwood Sprinkler Co. will build a steel, glass and concrete, 1 and 2-story, 107 x 300-foot addition to cost $50,000.

PAWTUCKET, R. I.—The J. D. Crosby Co., metal products manufacturer, is erecting a 1-story, 48 x 80-foot factory.

PROVIDENCE, R. I.—The Textile Finishing Machine Co. recently awarded the contract for the erection of a 2-story machine shop.

WEST GREENWICH, R. I.—Bids close in Providence, R. I., Aug. 28, for a reinforced concrete arch bridge, 30 x 56 feet, of 40-foot span, to be known as the Big River bridge.

BRIDGEPORT, CONN. — The National Equipment Corp. has been incorporated to make machinery with $50,000 capital by Harry B. Romm, Francis J. Breen and H. E. Walsh.

BRIDGEPORT, CONN.—A $30,000 storage building will be erected by the Chapman & Bangs Co. The proposed structure will be three stories, 39 x 87, and 24 x 58 feet.

BRIDGEPORT, CONN.—The Bullard Machine Tool Co. has awarded the contract for the construction of a 2-story, 74 x 128-foot pattern and storage building to John R. Sheeham.

DANBURY, CONN.—The Danbury Industrial Corp. has been incorporated with $250,000 capital to manufacture war materials.

HARTFORD, CONN.—The American Machine Co. has been incorporated with $50,000 capital by Frank D. Ellison, George E. Quinn and Robert H. Palmer.

NEW HAVEN, CONN.—R. W. Fabian, architect, 147 Bradley street, recently received bids for the construction of a 1-story, 45 x 90 foot garage for the Connecticut Sash & Door Co. The garage will cost about $15,000.

NEW LONDON, CONN.—The government let a contract to the Evatt Construction Co., Boston, for a fuel and Diesel oil storage tank and pump house to cost $60,000 at the submarine base.

STAMFORD, CONN.—Thompson & Binger, Inc., will erect a 5-story, 76 x 114-foot warehouse here for Baer Bros., 438 West Twenty-seventh street, New York City.

STRATFORD, CONN. — The Stratford Body Co. has been incorporated to make automobiles, etc., with $10,000 capital by John T. L. Hubbard, Fairfield, Conn., D. LeGards Harris, Newtown, Conn., and G. L. Watt, Bridgeport, Conn.

TORRINGTON, CONN. — The Fitzgerald Mfg. Co., sheet metal goods manufacturer, expects soon to start on the construction of a 2-story, 53 x 307 foot factory.

Along the Middle Atlantic Seaboard

AUBURN, N. Y.—B. A. Dean & Son Co. recently was incorporated with $40,000 capital to deal in machinery, etc., by B. A. Dean, 222 Genesee street and others.

BINGHAMTON, N. Y.—The Binghamton Bridge Co., of which S. S. Mallory is president, has purchased a site at Port Dick and will construct a hydroelectric plant.

BROOKLYN, N. Y.—An $18,000 pattern shop addition will be erected by E. Weber, 7 La Grange street.

BROOKLYN, N. Y.—The Pines Rubber Co., 148 Thirty-ninth street, has abandoned the idea of erecting a $100,000 factory building.

BROOKLYN, N. Y.—The Cambria Machine Co. will erect an addition to its machine shop at 61 Poplar street. C. Gastmeyer, 1652 Myrtle avenue, Richwood, Long Island, is architect.

BROOKLYN, N. Y.—The Ramberg Iron Works, Inc., completed plans for a ship repair plant, to consist of a forge shop, blacksmith shop, boiler shop, machine shop, carpenter shop and office building. The plant will be erected at Deykman, Sullivan and Wolcott streets.

BUFFALO.—The New York Car Wheel Co. is taking bids on the construction of a 1-story, 58 x 158-foot factory building.

BUFFALO.—The General Drop Forge Co. has let the contract for forge shop alterations and additions.

BUFFALO.—The American Purchase Sales Co., 528 Ellicott Square building, will build a boiler and pump house.

BUFFALO.—The Atlas Steel Car Co. has let the general contract for a 1-story plant 60 x 200 feet to cost $40,000, to the Austin Co., Cleveland.

BUFFALO.—The Kellog Structural Steel Co. is contemplating the erection of a steel shop addition to be constructed at a cost of $10,000.

BUFFALO.—The H. W. Wolcott Co., with $200,000 capital was incorporated to deal in automobile accessories by W. H. and C. W. Gabriel and H. W. Wolcott, Buffalo.

BUFFALO.—The American Chemical Products Co. has constructed at South Park avenue, and Colgate street an acid manufacturing plant.

BUFFALO.—Dissolved acetylene gas will be manufactured in four large factory buildings to be erected in South Buffalo by the Presto-Lite Co., Inc., of New York.

BUFFALO.—Albert J. Howard, Norfolk and Northumberland avenues, has the contract for the erection of a forge building 80 x 245 feet for the government.

BUFFALO.—The Nash Buffalo Corp. has been incorporated with $78,750 active capital to deal in all kinds of motors. The incorporators were A. E. Skinner, M. B. and C. B. Warren, 255 West End avenue.

BUFFALO.—The Commercial Electrolytic Corp. has constructed a plant for the manufacture of ammonium persulphite used by the army and navy for cleaning guns. The company is contemplating the erection of an addition.

COLLEGE POINT, N. Y.—The Victor R. Browning Co. will build a $30,000, 2-story brick shop addition, 50 x 137 feet.

CLYDE, N. Y. — The Paige Metal Co., Rochester, N. Y., plans the erection of an aluminum manufacturing plant.

EAST ROCHESTER, N. Y.—A $500,000 car repair plant will be erected by the Merchants Dispatch Transportation Co. The proposed building will be one-story, 150 x 1000 feet.

ELMIRA, N. Y.—The Kennedy Valve Co. recently completed a large extension to its iron foundry, which is to be utilized as a storage room, to release space in another part of the shop for additional molding machines.

GENEVA, N. Y.—Plans have been completed for a $15,000 boiler house for a municipal power plant.

GENEVA, N. Y.—The Catchpole Boiler Works has had plans prepared for a foundry addition 30 x 87 feet.

GLOVERSVILLE, N. Y. — The Republic Platinum Corp. recently was incorporated with $50,000 capital to deal in mines, etc., by H. H. Belknap, E. P. Bellows and I. H. Wright, 58-60 North Main street.

LONG ISLAND CITY, N. Y.—A $400,000 addition, 1-story, 109 x 499 feet, will be erected at the plant of the Wright-Martin Aircraft Corp.

NEW YORK.—The National Bridge Works has had plans prepared for the erection of a 1-story, 83 x 135-foot addition, at an estimated cost of $20,000.

NEW YORK.—The Rex Products Corp. recently was incorporated with $100,000 capital to deal in fire extinguishing apparatus. The incorporators are S. H. Meyers, H. D. Aery, and F. B. Spaulding, 50 East Forty-second street.

NEW YORK.—The North River Ship & Engine Corp. has been incorporated by F. H. Shomburg, M. Metkiff, P. D. Benson, 154 Chambers street, with $100,000 capital, to build and deal in boats, vessels, etc.

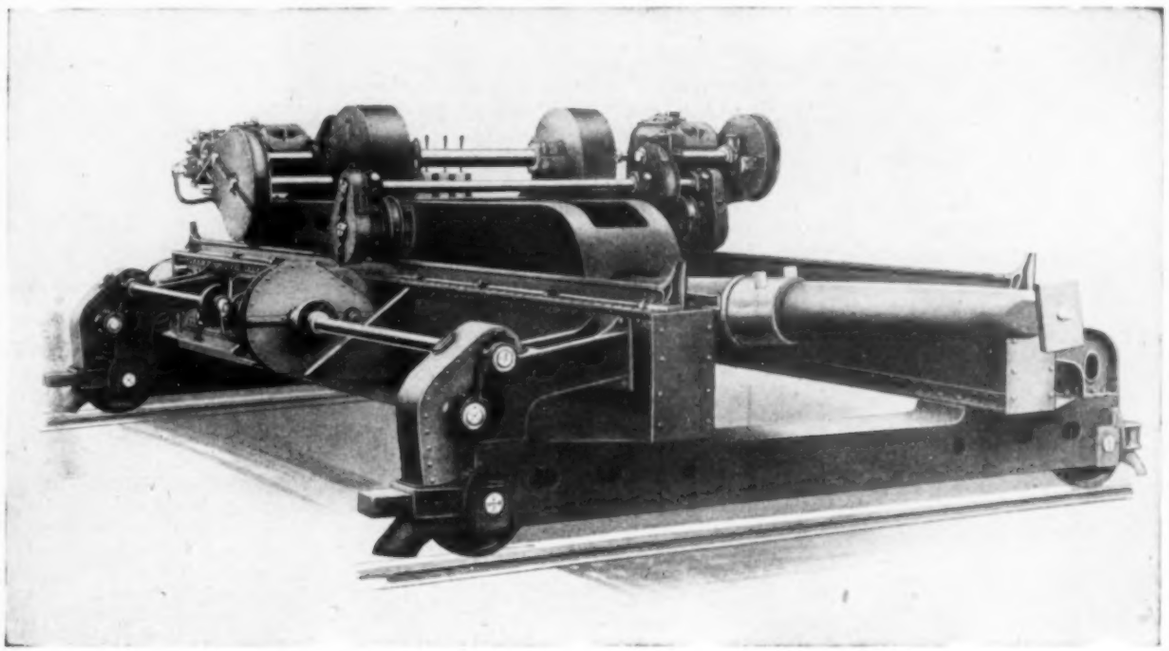
NEW YORK.—The Brown & Sharpe Co., of New York, has been incorporated at Albany, with $10,000 capital to deal in machinery, tools, and mechanical appliances. The company was incorporated by P. E. Good, R. Noble and S. M. Teeter, 516 West 162nd street.

ROCHESTER, N. Y.—The Rochester Auto Parts Co. recently awarded the contract for the erection of a 1-story, 40 x 100-foot garage, to cost $10,000.

SCHENECTADY, N. Y. — The American Locomotive Co. has let a contract to the Lackawanna Bridge Co., Buffalo, for the erection of an addition to the boiler shop to cost $150,000.

THOMPKINSVILLE, N. Y.—The United States government is contemplating the erec-

STEEL PLANT EQUIPMENT
COKE OVEN MACHINERY
GAS PRODUCERS
ORE AND COAL HANDLING MACHINERY
SPECIAL CRANES
MINING MACHINERY
HYDRAULIC TURBINES



Charging Machines

The Wellman-Seaver-Morgan Company originated, first built, developed, and for many years was the sole constructor of mechanical chargers for open hearth furnaces.

The W-S-M Low Type Charger is pictured above. Some conditions indicate the use of the High Type Charger or the Crane Type.

We are prepared to build a special machine for your particular requirements.

Bulletin A 7, "W-S-M Charging Machines and Manipulators," will be sent on request.

THE WELLMAN-SEAVER-MORGAN CO.

CLEVELAND, OHIO, U.S.A.

tion of a machine shop here. Plans have not been announced.

WATERTOWN, N. Y.—Preliminary plans have been drawn for a $300,000 municipal electric plant. Thomas L. Tomplines, Syracuse, New York, is in charge.

EASTON, PA. — The Easton Machinery Co. is in the market for two second hand 24-gage steam locomotives.

ELWOOD CITY, PA.—The Mathews Gravity Carrier Co. is constructing an addition, 50 x 178 feet. The building will be of concrete and steel construction and when completed will double the capacity of the plant.

ERIE, PA.—The Standard Stoker Co. is building two 1-story, 35 x 35-foot additions to its foundry at an estimated cost of $10,000.

ERIE, PA.—The German Bronze Co. has had plans prepared recently for the erection of a foundry addition to its plant.

ESSINGTON, PA.—The Reading railroad has awarded the contract for the erection of a 70 x 200 engine house.

FRANKFORD, PA. — The United States government is building a $3,000,000 addition to the benzol distilling plant of the Barrett Co. and will also build an additional power plant.

LANCASTER, PA.—The Rowe Motor Mfg. Co. is contemplating the erection of a 1-story addition, 120 x 200 feet. The extension when completed will be equipped with modern machinery and cranes for handling heavy material.

MILLVALE, PA.—The E. T. Lippert Saw Co. has let the contract for a 3-story machine shop addition 37 x 144 feet to cost $40,000.

PHILADELPHIA.—The Newton Machine Works recently awarded a contract for improvements to its plant at an estimated cost of $12,000.

PHILADELPHIA.—The plant of William & Harvey Rowland, Inc., is being rebuilt after being recently badly damaged by fire. The company manufactures automobile springs.

RUTHERFORD, PA.—A. L. Carhart is estimating on plans for an engine house 114 x 132 feet for the Reading Railway Co.

BLOOMFIELD, N. J.—The Sprague Electric Works within a short time is expected to award a contract for 10 large turret lathes.

HARRISON, N. J.—The Crucible Steel Co. is contemplating the erection of a tinsmith shop, 32 x 235 feet, to be constructed at a cost of $18,000.

IRVINGTON, N. J.—The Liberty Machine & Tool Co. recently awarded the contract for the erection of a 1-story, 80 x 100 foot machine shop.

KEARNY, N. J.—The Kearny Brass Co., 290 Maple street, has been incorporated to engage in machine and tool manufacturing It was capitalized at $25,000.

NEWARK, N. J.—The Essex Foundry Co. has awarded a contract for the erection of a 1-story, 75 x 180-foot addition to its foundry.

NEWARK, N. J.—The Union Smelting & Refining Co. is contemplating the erection of a factory, to be built at an estimated cost of $18,000.

NEWARK, N. Y.—The Diener Mfg. Co recently was incorporated with $100,000 capital to engage in the business of electrical and mechanical engineering.

DOVER, DEL.—The Alliance Co., Inc., was incorporated to manufacture and deal in motorcycles, motor engines, stationary engines, etc., with $100,000 capital.

WILMINGTON, DEL.—The Janish Mfg. Co. was incorporated with $100,000 capital to manufacture and deal in metal devices and appliances of every description.

WILMINGTON, DEL.—The Globe Manganese & Copper Co. has been incorporated to engage in mining, manufacturing, etc., with $500,000 capital.

WILMINGTON, DEL. — The Moorhead Radio Corp. recently was incorporated to manufacture and deal in electrical, magnetical and mechanical contrivances. It was capitalized at $1,000,000.

BALTIMORE.—Government officials awarded a contract to the Crown Cork & Seal Co. of this city, for cartridges for the war department and machinery will be installed.

HAGERSTOWN, MD. — The Norfolk & Western railroad, according to a report is contemplating the erection of new shops here.

Activities in the Central States

JANESVILLE, WIS.—A special election has been called for Sept. 3 to vote on the question of issuing bonds for $70,000 for the construction of a bridge over the Rock river at South Jackson streets. City Engineer C. V. Kerch has completed plans.

MANITOWOC, WIS.—McMullen & Pits have taken a contract for the construction of a combination highway and interurban bridge at Little Manitowoc.

MILWAUKEE.—The Thomas Furnace Co. awarded a contract to Meredith Bros., 1043 Kinnickinnic avenue, for the construction of a hot blast stove.

MILWAUKEE. — The Standard Crucible Steel Casting Co., 719 Thirtieth street, will install a new open-hearth furnace and awarded the construction contract to Meredith Bros., 1043 Kinnickinnic avenue.

MILWAUKEE. — Albert Trostel & Sons Co., 899 North Water street, will build a plant addition, 48 x 180 feet, costing about $30,000. Architect Eugene R. Liebert is in charge.

MILWAUKEE.—The Universal Machinery Co., 784 Thirtieth street, is building a machine shop 150 x 480 feet, a foundry and a power plant on Sixty-fourth avenue, West Allis. E. C. Devlin is president.

MILWAUKEE.—The carpenter shop of the Pabst Brewing Co., Tenth street and Cold Spring avenue, has been leased by the Trico Fuse & Mfg. Co. The building will be remodeled and equipped for the manufacture of fuses.

MILWAUKEE.—The Schlitz Brewing Co. will remodel and enlarge one of its buildings into a complete carbonic acid gas producing plant for the use of the Phoenix Carbonic Gas Co., organized with capital of $10,000 by Arthur R. George, William Ludwig and M. R. Schenk. Two 65-foot steel towers will be added. The building will be 120 x 120 feet, and two stories high.

NORTH MILWAUKEE, WIS. — A. F. Schwan, city clerk, is taking bids for the construction of about 1400 feet of 6-inch cast iron water mains, the contractor to furnish pipe and all other material.

PORTAGE, WIS.—The Briggsville Roller Mills Co. will make extensive improvements to its water power plant costing about $10,000. Charles Gibson is manager.

RACINE, WIS.—A new public garage and service station, 85 x 120 feet, has been completed by Chester Dahl, 715 Wisconsin street.

SHEBOYGAN, WIS.—A two-story factory addition costing about $20,000 will be built by the Sheboygan Cigar Box Lumber & Mfg. Co. which recently increased its capital stock.

DETROIT. — Charles A. Gadd, business manager for the board of education, will take bids about Sept. for a heat, light and power plant at Cass Technical school, costing $125,000.

JACKSON, MICH.—The Michigan Central railroad will build a boiler and tank shop of brick and steel construction, 215 x 270 feet, costing $350,000.

BELLEVILLE, ILL. — The East Side Foundry & Machine Co., capitalized at $20,000, has been chartered by E. T. Rhodes, Charles Lotz and Robert Kooistra.

CHICAGO.—The Master Trucks, Inc., has indefinitely postponed the erection of its factory until the conclusion of the war.

CHICAGO. — The Eastern Steel Car & Foundry Co., 136th street and Brandon avenue, will build additions costing $30,000.

CHICAGO.—The Kahan Machine Works, 12 North Jefferson street, capitalized at $7500, has been chartered by Adolph K. Kahan, Lillian Agnoff and Eva Newman.

CHICAGO.—The Alexander Railroad Crossing & Equipment Co., capitalized at $50,000, has been chartered by William P. Johnson, J. M. Ijams, and B. F. Baker.

CHICAGO.—The Manufacturers' Equipment Co., 175 North Jefferson street, will build a 1-story factory at Wallace and Fillmore streets, to cost $50,000.

CHICAGO.—The Chicago Bridge & Iron Works, 1341 West 105th street, is building a 2-story addition, 48 x 54 feet, at a cost of $10,000.

CHICAGO.—The R. M. Eddy Foundry Co. will build a machine shop 90 x 284 feet, of brick and steel, costing about $100,000. The Austin Co., 122 South Michigan avenue, has the general contract.

CHICAGO.—The Arnold Co. has taken a contract for additions to the shops of the Chesapeake & Ohio railroad at Huntington, W. Va., including a brass foundry 55 x 240 feet, a blacksmith shop 60 x 288 feet, erecting shop 113 x 400 feet, with equipment, costing $500,000.

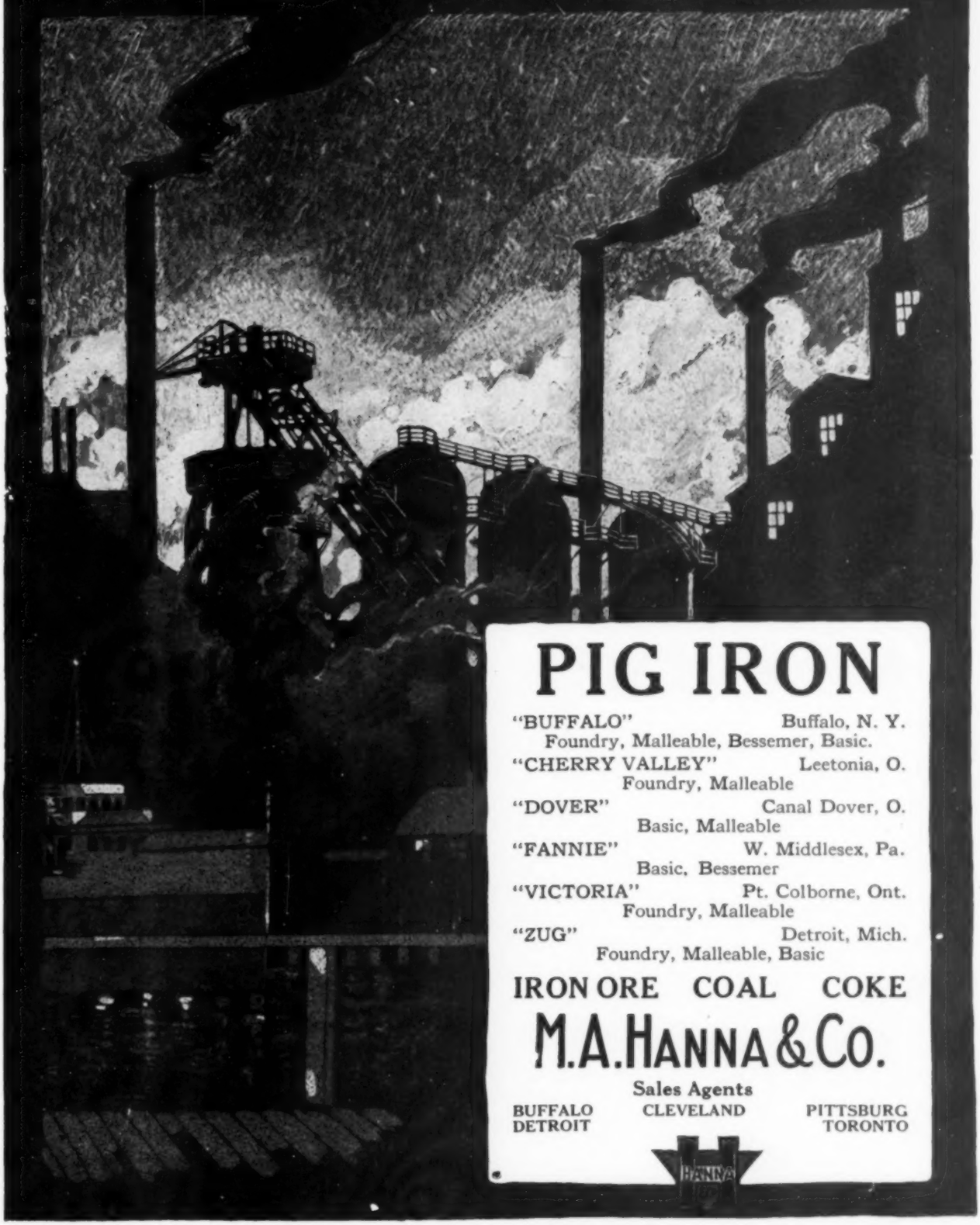
ANDERSON, IND. — The Remy Electric Co. is building an addition 50 x 320 feet.

INDIANAPOLIS.—The Ideal Brass Works, North Elder street, will build a 1-story addition to cost $25,000.

INDIANAPOLIS, IND.—The Oakes Co., manufacturer of automobile parts and metal stampings, is building an extension to its plant, which will cost in the neighborhood of $50,000.

BLOOMDALE, O.—At a special election held here recently the electors of the town voted to issue $15,000 in bonds, the money to be used for the erection of a municipal power plant.

HANNA



PIG IRON

"BUFFALO" Buffalo, N. Y.
Foundry, Malleable, Bessemer, Basic.

"CHERRY VALLEY" Leetonia, O.
Foundry, Malleable

"DOVER" Canal Dover, O.
Basic, Malleable

"FANNIE" W. Middlesex, Pa.
Basic, Bessemer

"VICTORIA" Pt. Colborne, Ont.
Foundry, Malleable

"ZUG" Detroit, Mich.
Foundry, Malleable, Basic

IRON ORE COAL COKE

M. A. HANNA & Co.

Sales Agents

BUFFALO CLEVELAND PITTSBURG
DETROIT TORONTO

HANNA

Iron and Steel Prices

Corrected to Tuesday Noon

IRON ORE

Superior Ores, Per Ton, Lower Lake Ports

Old range Bessemer, 55 iron	$6.40
Mesabi Bessemer, 55 iron	6.15
Old range non-Bess., 51½ iron	5.65
Mesabi non-Bess., 51½ iron	5.50

WAREHOUSE PRICES

Steel bars, Chicago	4.17c
Steel bars, Cleveland	4.07c
Steel bars, Detroit	4.13c
Steel bars, Philadelphia	4.13c
Steel bars, New York	4.145c
Steel bars, St. Louis	4.24c
Steel bars, Cincinnati	4.13c
Steel bars, St. Paul	4.395c
Steel bars, Buffalo	4.10c
Iron bars, Buffalo	4.70c
Iron bars, Chicago	**4.10c**
Iron bars, Cleveland	4.67c
Iron bars, Detroit	**4.75c**
Iron bars, St. Louis	4.24c
Iron bars, Cincinnati	4.13c
Iron bars, Philadelphia	4.60c to 4.73c
Iron bars, New York	4.745c
Shapes, Chicago	4.27c
Shapes, Detroit	4.23c
Shapes, St. Louis	4.34c
Shapes, St. Paul	4.495c
Shapes, New York	4.245c
Shapes, Cleveland	4.17c
Shapes, Philadelphia	4.23c
Shapes, Buffalo	4.20c
Shapes, Cincinnati	4.23c
Plates, Buffalo	4.45c
Plates, Chicago	4.52c
Plates, Detroit	4.48c
Plates, St. Louis	4.59c
Plates, St. Paul	4.745c
Plates, New York	4.495c
Plates, Cleveland	4.42c
Plates, Philadelphia	4.48c
Plates, Cincinnati	4.48c
No. 10 blue anl. sheets, Chi.	5.52c
No. 10 blue anl. sheets, Cleve.	5.42c
No. 10 blue anl., Buffalo	5.45c
No. 10 blue anl., sheets, St. L.	5.59c
No. 10 blue anl. sheets, Cinci.	5.48c
No. 10 blue anl. sheets, St. Paul	5.745c
No. 10 blue anl. sh., Detroit	5.48c
No. 28 black sheets, Chgo.	6.27c
No. 28 black sheets, Cleve.	6.42c
No. 28 black sheets, Cinci.	6.48c
No. 28 black, Detroit	6.48c
No. 28 black sheets, St. L.	6.59c
No. 28 black sheets, St. Paul	6.745c
No. 28 galv. sheets, Chgo.	7.52c
No. 28 galv. sheets, Cleve.	7.67c
No. 28 galv. sheets, Cinci.	7.73c
No. 28 galvanized, Detroit	7.73c
No. 28 galv. sheets, St. L.	7.59c
No. 28 galv. sheets, Buffalo	7.70c
Hoops, Cleveland	4.92c
Hoops, Detroit	4.98c
Hoops, Buffalo	4.95c
Cold rolled sheets, Buffalo	6.45c
Cold rolled steel	list and 10

IRON AND STEEL SCRAP

(Prices in Gross Tons)

STEEL WORKS USE

Bundled sheets, Cincinnati	$23.00 to 23.50
Bundled sheets, Pittsburgh	**22.00**
Bundled sheets, Cleveland	26.00 to 27.00
Bundled sheets, Buffalo	**24.00 to 25.00**
Boiler plate, cut, No. 1, Chg.	27.50 to 28.50
Boiler plate, cut No. 1, St. L.	26.50 to 27.00
Frogs, switches, guards, St. L.	28.50 to 29.00
Frogs, switches, guards, Chgo.	**29.00**
Heavy melting steel, Pitts	**29.00**
Heavy melting steel, Buffalo	**30.00**
Heavy melting steel, Chgo.	**29.00**
Heavy melt'g steel, Cleveland	**29.00**
Heavy melting steel, Cinci.	28.00 to 28.50
Heavy melt'g steel, east. Pa.	28.00 to 29.00
Heavy melting steel, N. Y.	26.00
Heavy melting steel, St. L.	28.50 to 29.00
Heavy melt'g steel, Birming.	27.00 to 27.50
Baled sheets, Cleveland	28.50 to 29.00
Baled sheets, Pitts	26.00
Baled sheets, Chgo	29.00
Knuckles, couplers, Chgo	34.00
Knuckles, coup., St. Louis	33.00 to 33.50
Low phos. steel, Buffalo	37.50
Low phos. steel, Pittsburgh	39.00
Low phos. crops eastern Pa.	39.00
Low phos. guaranteed E. Pa.	36.50
Shoveling steel, Chicago	29.00
Shoveling steel, St. Louis	28.00 to 28.50
Springs, Chgo.	34.00
Steel rails, short, Chicago	34.00
Steel rails, short, Cleveland	34.00
Steel rails, short, St. Louis	32.50 to 33.00
Steel rails, old, Birmingham	28.00 to 30.00

Stove plate, Chgo	28.00 to 28.50
Stove plate, Cincinnati	22.50 to 23.00
Stove plate, St. Louis	25.50 to 26.00
Stove plate, N. J. points	27.25
Stove plate, Birmingham	24.00 to 25.00
Stove plate, Buffalo	27.50 to 28.00
Stove plate, eastern Pa	29.00
Stove plate, Cleveland	**25.00 to 25.50**
Stove plate, Pittsburgh	26.50 to 27.00

Freight Rates, Pig Iron

Mahoning and Shenango valleys to:	
Cleveland	$1.40
Newark, N. J.	4.40
Boston	4.60
Philadelphia	4.10
Pittsburgh	1.40
St. Louis	4.60
Minneapolis, St. Paul	5.70
Buffalo to:	
Albany, N. Y.	$1.75
New England (rail)	3.90
New York and Brooklyn (rail)	3.90
Virginia furnaces to:	
Philadelphia	$4.10
New England	4.70
Brooklyn, Jersey City, Newark	4.40
Birmingham, Ala., to:	
Boston	$7.50
Cincinnati	3.60
Chicago	5.00
Cleveland	5.00
Louisville, Ky.	3.30
Minneapolis, St. Paul	7.30
New York (r. and w.)	7.50
Philadelphia (r. and w.)	6.60
Pittsburgh	6.10
Savannah, Ga.	3.40
St. Louis	4.25
Chicago to:	
Des Moines	$3.50
Minneapolis, St. Paul	2.50
Milwaukee	.60
Moline, Ill.	1.40
Omaha	4.50
St. Louis	1.90
Ironton and Jackson, O., to:	
Chicago	$3.75
Cincinnati	1.75
Cleveland	2.40
Detroit	2.60
Indianapolis	2.30
Minneapolis, St. Paul	5.70
Duluth, Minn., to:	
Minneapolis, St. Paul	$1.60
Mayville, Wis.:	
Minneapolis-St. Paul	$2.20

Freight Rates, Finished Material

Pittsburgh, carloads, per 100 lbs., to:	
New York	24.5 cents
Philadelphia	23.0 cents
Boston	27.0 cents
Buffalo	21.5 cents
Baltimore	22.5 cents
Cleveland	17.0 cents
Cincinnati	23.0 cents
Chicago	27.0 cents
Detroit	23.0 cents
Minneapolis and St. Paul	49.5 cents
Denver	$1.09
St. Louis	33.5 cents
New Orleans	38.5 cents
Birmingham	56.5 cents
Pacific coast (all rail)	$1.25
Pacific coast (tin plate)	1.25

IRON MILL USE

Angle bars, iron, Chgo	39.00
Angle bars, steel, St. Louis	32.00 to 32.50
Angle splice bars, St. Louis (iron)	37.50 to 38.00
Arch bars, transoms, Chgo.	45.50 to 46.50
Arch bars and transoms, St. Louis	45.50 to 46.00
Busheling, No. 1, Cleveland	30.50 to 31.00
Busheling, No. 1, Buffalo	**29.00 to 30.00**
Busheling, No. 2, Buffalo	**21.00 to 23.00**
Busheling, No. 1, Pittsburgh	32.00
Busheling, No. 1, Cincinnati	26.00 to 26.50
Busheling, No. 1, Chgo	30.50 to 31.00
Busheling, No. 2, Chgo	20.00 to 21.00
Busheling, No. 1, St. Louis	30.50 to 31.00
Cast borings, New York	16.25 to 16.75
Cast borings, eastern Pa	19.00
Cast borings, Buffalo	18.00 to 19.00
Cast, borings, Cleveland	18.50 to 19.00
Cast borings, Cincinnati	16.50 to 17.00
Cast borings, Pittsburgh	**19.00**
Cast borings, Birmingham	17.00 to 18.00
Cast borings, Chgo	18.50 to 19.00
Cast borings, St. Louis	18.50 to 19.00

City wrought, long, N. Y.	30.00
Cut forge, Chgo	32.00 to 32.50
Forge flashings, small, Cleve.	28.00 to 29.00
Forge flashings, large, Cleve.	27.50 to 28.00
Forge No. 1, eastern Pa	28.00 to 29.00
Grate bars, Buffalo	27.50 to 28.00
Grate bars, Cleveland	25.50 to 26.00
Grate bars, N. J. points	27.25
Iron axles, Pittsburgh	**46.50**
Iron axles, Cincinnati	43.50 to 44.00
Iron axles, Cleveland	**46.50**
Iron axles, Chicago	**46.50**
Iron axles, eastern Pa	**46.50**
Iron axles, St. Louis	**46.00 to 46.50**
Iron axles, Buffalo	**45.00 to 47.00**
Iron rails, Chicago	39.00
Iron rails, Buffalo	**36.00 to 37.00**
Iron rails, Cincinnati	34.00 to 35.00
Iron rails, St. Louis	38.50 to 39.00
Iron rails, Cleveland	37.00 to 38.00
Machine turnings, Cincinnati	17.00 to 17.50
Machine turnings, Cleve.	18.50 to 18.75
Machine turnings, Buffalo	**17.00 to 17.50**
Machine turnings, N. Y.	16.25 to 16.75
Machine turnings, Pitts.	18.00 to 19.00
Machine turnings, east. Pa.	19.00
Machine turnings, Birming.	16.00 to 17.00
Machine turnings, Chicago	17.50 to 18.00
Machine shop turnings, St. L.	18.50 to 19.00
Pipes and flues, Cleveland	28.00 to 29.00
Pipes and flues, Chicago	27.50 to 28.00
Pipes and flues, St. Louis	27.50 to 28.00
R. R. mch. cast, No. 1, Buff.	34.00
R. R. wrgt. No. 1, Buffalo	34.00
R. R. wrgt., No. 1, east Pa.	34.00
Railroad wrgt. No. 1 Cinci.	33.50 to 34.00
Railroad wrgt., No. 1, Cleve.	34.00
R. R. wrought, No. 1, Pitts.	34.00
Railroad wrgt., No. 2, Chgo.	32.00 to 32.50
Railroad wr'ght, No. 1, Chgo.	33.50 to 34.00
R. R. wrgt. No. 1, Birming.	29.00 to 30.00
No. 1 yard wrought East Pa.	**33.00**
No. 1 busheling wrgt., E. Pa.	**31.00**
Sheet wrought, Pittsburgh	33.00
Railroad wrgt., No. 1, St. L.	33.50 to 34.00
Railroad wrought, No. 2	32.50 to 33.00
Wrought pipe, Buffalo	27.00 to 28.00
Wrought pipe, eastern Pa	33.00
Wrought pipe, ungraded, eastern Pa.	29.00

IRON OR STEEL WORKS USE

Axle turnings, Cleveland	$24.00
Axle turnings, Buffalo	24.00
Heavy axle turn'gs, E. Pa.	24.00
Heavy axle turnings, Pitts.	24.00
Shafting, New York	35.50
Shafting, eastern Pa	39.00
Steel car axles, Pittsburgh	46.50
Steel car axles, Birmingham	38.00 to 40.00
Steel car axles, New York	**43.00**
Steel car axles, Buffalo	**44.00 to 46.00**
Steel car axles, Cleveland	**44.00**
Steel car axles, eastern Pa	**46.50**
Steel car axles, Chgo	**46.50**
Shafting, St. Louis	38.00 to 39.00
Steel car axles, St. Louis	**46.00 to 46.50**

IRON FOUNDRY USE

Car wheels, (iron), Pitts	**$29.00**
Car wheels, (steel), Pitts	**34.00 to 35.00**
Car wheels, eastern Pa	**29.00**
Car wheels, Buffalo	**29.00**
Car wheels, Chicago	**29.00**
Car wheels, St. Louis	**28.50 to 29.00**
Car wheels, Birmingham	29.00 to 30.00
Car wheels, Cleveland	**30.00**
Tram car wheels, Birming.	28.00 to 29.00
Cast, No. 1, Birmingham	29.00 to 30.00
Cast, No. 1, cupola east. Pa.	34.00
Cast, No. 1, Cleveland	33.00 to 34.00
Cast, No. 1, Cincinnati	33.00 to 34.00
Cast, 1, heavy, N. Y.	32.25 to 32.50
Cast, 1, machy., N. Y.	32.25 to 32.50
Cast, No. 1, Chicago	34.00
Cast, No. 1, Pittsburgh	32.50 to 33.00
Cast, No. 1, St. Louis	32.00 to 32.50
Malleable, Cincinnati	**30.00 to 34.00**
Malleable, Cleveland	**30.00 to 34.00**
Malleable, Buffalo	**29.00 to 34.00**
Malleable, Pittsburgh	**33.00 to 34.00**
Malleable, east. Pa	**29.00**
Malleable, cupola, East Pa.	33.00
Malleable railroad, Chgo.	34.00
Malleable, agricultural, Chgo.	33.00 to 33.25
Malleable railroad, St. Louis	32.00 to 32.50
Malleable agricultural, St. L.	31.00 to 31.50

MISCELLANEOUS USES

Boiler punchings, Chgo	36.00 to 36.50
Reroll. rails, 5 ft. & ov., Pitts.	**34.00**
Reroll. rails, 5 ft. & ov., Chgo.	**34.00**
Reroll. rails, 5 ft. & ov., E. Pa.	**34.00**
Reroll. rails, 5 ft. & ov., St. L.	**33.50 to 34.00**
Reroll. rails, 5 ft. or over, Cleve.	**34.00**
Rerolling rails, long, Birm.	**37.50 to 38.50**
Locomotive tires, Chgo.	45.50 to 46.50
Locomotive tires, St. Louis	43.50 to 44.00